CENTRAL RECORDS

#2912

NO FURTHER REMEDIAL ACTION PLANNED (NFRAP)

Date: 3/6/90

From: Brian G. Farrier
South Florida Project Officer
Site Assessment Section
347-5065

SUBJECT: See Below

EPA ID No. FLD073869417

No further remedial action is planned by EPA for the aforementioned site. This recommendation is based on a thorough examination of the file material pertaining to the site, with justification listed below:

Site	County	Comment
Boston Printing Co.	Broward	Acetone contamination in one GW sample only at 43 ug/l. Not found in soils. Suspected offsite source. Remedial activity at Hollingsworth (NPL) nearby may clean up acetone.

Brief

SI Reassessment

3/1/90

Boston Printing - Broward Cty
741 NW 57th Pl.

- Site owned by Hollingsworth Solderless prior to 1982.
- 9/86 PA documents contamination of effluent to drainfield, and noted that company was installing a new treatment system. Old one failed. Photo processing chemicals.
- 6/86 HRS score of 54.
- 2/86 FC Jordan report documents 12/19/85 Sampling. No organic contaminants found in GW except acetone which is not used in the [illegible] photo processes. Compare to Burke Johnson [illegible] also looked suspicious.
- Hollingsworth Solderless became an NPL site (WC address @ 700 NW 57th Pl.)
(RPM Scogin / Enforc.) Sue Zimmerman
↑ discussed remedial action of aerating, pumping but which address?

Since Hollingsworth is still in area I would assume that contamination at the Boston address would be looked at by Superfund!?

However, the Boston address was used for storage purposes by Hollingsworth. (con'd)

GW-1 43½ acetone

3/2/90

BOSTON PRINTING con'd

James Kopotic said that he was involved with the remedial activities at Hollingsworth during the stage where the parking lot dirt was exhumed and aerated. He said to talk to Eve Zimmerman and/or Scogin about further remediation efforts in the last 2-3 years. He did not know of any remediation at the Boston Printing Address which Hollingsworth formerly owned.

Talked to Jim Orban, who said that ground water pumping and aeration should begin soon. Aeration will remove acetone and most of the chemicals used by Boston which are volatile (except Cl or which is recovered by Boston).

Looking at the feasibility study for Hollingsworth, it appears that Boston should be affected by the drawdown at H.

However, this may not be what we want to happen, since we don't want to draw in contamination from adjacent sites and contaminate the interim clean water. Accordingly, reinjection wells are being placed outside the drawdown area.

We need to determine this well placement before and notifying location MFRAPing Boston.

SITE INSPECTION REPORT

FOR

BOSTON PRINTING CO., INC.
FT. LAUDERDALE, BROWARD COUNTY, FLORIDA
FLD073869414

SUBMITTED TO

FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
2600 BLAIRSTONE ROAD
TALLAHASSEE, FLORIDA

BY

E.C. JORDAN CO.
1311 EXECUTIVE CENTER DRIVE
TALLAHASSEE, FLORIDA

FEBRUARY 1986

SITE INSPECTION REPORT
BOSTON PRINTING CO., INC.
FT. LAUDERDALE, FLORIDA
FLD073869414

1.0 EXECUTIVE SUMMARY

Boston Printing occupies a one-half acre lot on NW 57th Place in Ft. Lauderdale, Florida. The site is 3,000 feet east of the Ft. Lauderdale Executive Airport. Boston Printing is a photographic printing facility which uses silver-based film and developing chemicals in its operations.

On October 1, 1985, E.C. Jordan personnel conducted a site reconnaissance of Boston Printing and interviewed Mr. George Stern, the owner. On December 19, 1985, Jordan personnel returned to the site to collect groundwater samples for laboratory analysis of volatile and semi-volatile organics and the twelve metals regulated by the State of Florida.

Groundwater from one of the shallow PVC wells installed at the site by the sampling crew contained 43 ug/l of acetone. No other organic contaminants were detected in wells at the site. All four of the wells sampled contained levels of iron (ranging from 0.35 mg/l to 0.66 mg/l) which exceed Florida Secondary Drinking Water Standards.

Elevated levels of iron in groundwater are common in the Ft. Lauderdale area. However, acetone, though not utilized at Boston Printing, is of concern. A further assessment of the origin and extent of the acetone contamination at the site is recommended, unless it is included in the cleanup of the Hollingsworth Superfund site.

2.0 BACKGROUND

The following sections briefly describe site location, layout, history of use, and remedial actions.

2.1 Location

Boston Printing is located in one building on a one-half acre site on Northwest 57th Place in Fort Lauderdale (Figure 1). The address of the site, along with its latitude and longitude are given below:

Boston Printing Company, Inc.
741 NW 57th Place
Ft. Lauderdale, Florida 33309
Broward County
Latitude 26° 12' 00"; Longitude 80° 09' 00"

2.2 Site Layout

The site layout is shown in Figure 2. The facility is located in a commercial/industrial area approximately 2,000 feet east of municipal well #12. There is a large parking area east of the building, a smaller parking area along the front, a paved alleyway on the north side of the facility, and the west side of the property is fenced off. Grassy areas border the north and east sides of the building and the east side of the large parking area. The north side of the alleyway is a bermed, heavily overgrown, semi-swampy area.

A septic tank and drainfield system is located near the southeast corner of the building. Another drainfield is located near the northeast corner of the facility.

2.3 Ownership History

Boston Printing is owned by M&G Stern Company, whose owner is Mr. George Stern. The facility has been occupied by Boston Printing for approximately four years. Prior to that, the building was used by Hollingsworth Solderless Terminal Company.

2.4 Site Use History

Boston Printing is a photographic printing facility. Raw materials used on-site include silver, n-propanol, hydroquinone, benzyl alcohol, and potassium hydroxide.

The facility is serviced by a municipal water system, but there are no municipal sewers in the area due to undercapacity at the wastewater treatment plant.

Industrial process water goes through a series of two silver recovery units and is discharged directly to a drainfield (this wastewater is sampled and analyzed monthly). Sanitary sewage goes to a septic tank and drainfield.

Prior to occupancy by Boston Printing, the building was used for storage purposes by Hollingsworth.

2.5 Permit and Regulatory History

As of October 1985, Boston Printing held a permit from Broward County Water Resources Management Division (WRMD), Wellfield Protection Ordinance Application No. 304.

The company has been issued several Warning Notices and a Notice of Violation which stemmed from a failed drainfield. Broward County Environmental Quality Control Board (BCEQCB) now samples the effluent to the drainfield on a monthly basis.

2.6 Remedial Action

In April 1985, a new drainfield was constructed to replace the failed system.

3.0 ENVIRONMENTAL SETTING

The following sections provide a description of the environmental setting based on the site reconnaissance, site investigation, and a review of available data.

3.1 Climate and Meteorology

The climate in Ft. Lauderdale is classified as subtropical. Average temperatures range from 67°F in January to 82°F in July and August. Mean annual rainfall is 60 inches and is unevenly distributed throughout the year. Rainfall averages 44 inches from October to May, and only 16 inches from November to April. The maximum 24-hour rainfall recorded at Ft. Lauderdale was 10.85 inches in October 1947. Annual evapotranspiration averages 52 inches per year, therefore there are only 8 inches of rainfall available annually for groundwater recharge or surface runoff (Ref. 6, p. 42, 53, 54).

3.2 Topography

The ground surface in the vicinity of Boston Printing is approximately 10 feet above mean sea level and relatively flat. Local changes in elevation are less than three feet (Ref. 2).

3.3 Surface Water

Rainwater at Boston Printing infiltrates into the soil in grassy areas on the north and east of the site or runs off toward the alley which borders the site on the north and the street which borders the site to the south. There is no evidence that catch basins in the area overflow after heavy rains (Ref. 5).

3.4 Geology and Soils

The geology of the Ft. Lauderdale area is composed primarily of sands and limestone formations. Near Boston Printing the surficial sands (8-15 feet thick) are part of the Pamlico Sand. Beneath the Pamlico Sand are approximately 60 feet of quartz and calcareous sands and 90 feet of limestone which make up the Pliestocene Anastasia Formation. The Pliocene Tamiami Formation, 50 feet of limestone over 80 feet of sand, lies beneath the Anastasia Formation.

The Pamlico Sands, Anastasia Formation and the Tamiami Formation are highly permeable deposits and form the unconfined Biscayne aquifer. At the base of the Biscayne aquifer, 290 feet below ground surface, lies impermeable siltstone of the Hawthorn Formation.

The Anastasia and Tamiami Formations thicken to almost 400 feet near the coast and thins to approximately 120 feet in western Broward County. To the south, in Dade County, the deposits of the Biscayne aquifer are primarily solution riddled limestone. The aquifer becomes more sandy to the north (Ref. 25, sheets 1 and 2).

3.5 Groundwater

The Biscayne aquifer is a highly permeable, unconfined aquifer which provides drinking water for nearly 3,000,000 people in southern Florida. The aquifer has been designated as a "sole-source aquifer" by the United States Environmental Protection Agency (Ref. 15).

Regional flow in the Biscayne aquifer is from west to east. The Everglades is an important source of recharge to the aquifer. The water table is within 10 feet of the ground surface throughout the area. Local groundwater flow directions are strongly influenced by the Cypress Creek Canal to the north of Boston Printing and by pumping of the 44 municipal wells of the Executive/Prospect Wellfield. In the absence of pumping, groundwater is estimated to flow toward the southeast near the Executive Airport (Ref. 23). Pumping at the wellfield has caused a large cone-of-depression and formation of a north-south groundwater divide. Changing well operations have caused this divide to migrate from east of Powerline Road in 1979 and 1980, to west of Powerline Road since 1982 (Ref. 22).

The Boston Printing site is 2,000 feet east of municipal well #12. Groundwater at the site is estimated to flow to the southeast, away from the wells. Prior to 1980 groundwater beneath the site flowed toward the municipal wells.

3.6 Land Use

Boston Printing is located in a commercial/industrial area near the Executive Airport. The site is 3,000 feet east of the airport. There are densely populated residential developments less than 1,000 feet east and 1,000 feet south of the site. There are also a number of recreational facilities adjacent to the Executive Airport including two large athletic stadiums approximately 1500 feet southwest of Boston Printing.

3.7 Population Distribution

Boston Printing is located in a primarily industrial area, but is near densely populated residential areas. Based on surrounding land use it is estimated that greater than 10,000 people live or work within one mile of the site. The most densely populated areas are the residential developments to the east and southeast (Ref. 2 and Ref. 5).

3.8 Water Supply

All of the residents of Ft. Lauderdale receive their water from the Biscayne aquifer. The municipal wells at the nearby Executive/Prospect Wellfield currently provide 37 million gallons of water per day. The wells range in depth from 75 to 150 feet and have capacities ranging from 600 to 1200 gpm. To date 13 of the 44 municipal wells have produced water containing volatile organic contamination (Ref. 6, p. 187 and Ref 22, Table 3-17).

3.9 Critical Environments

There are no critical environments in the immediate vicinity of Boston Printing. Threatened species in the Ft. Lauderdale area include the Limpkin, the Manatee, the Eastern Brown Pelican, and the Sandhill Crane (Ref. 24, p. 26, 36, 40, 62).

4.0 SITE INVESTIGATION

The following sections briefly describe the reconnaissance survey and sample collection episode conducted at the site by the Jordan Company.

4.1 Reconnaissance Survey

On October 1, 1985, D. Wilderman and C. Goodwin of the E.C. Jordan Co. performed a reconnaissance inspection at Boston Printing. During the visit, an interview was conducted with Mr. George Stern, the facility owner, and Mr. Bruce Hayes, assistant operator. Historical information, site ownership, substances stored on-site, waste disposal practices, and general operating procedures were among the items discussed. Following the interview, the site perimeter, potentially contaminated zones, approximate depth to the water table, and sampling areas were identified. A sampling plan was then prepared for review/approval by FDER.

4.2 Sample Collection

On December 18, 1985 E.C. Jordan Co. representatives (J. Farry and C. Goodwin) returned to Boston Printing and collected five groundwater samples. Groundwater samples were collected from four 1.25 inch diameter PVC wells installed by the sampling crew. Duplicate groundwater samples were taken at location GW-2. See Figure 2 for the location of sampling points. Samples were collected for analysis of volatile and semivolatile organics, pesticides and PCBs, oil and grease, and the twelve metals regulated by the State of Florida. Field measurements for pH, temperature, and specific conductance were obtained at each groundwater sample location and are presented in Table 1.

Wells were installed by digging to the water table using a post-hole digger and stainless steel bucket auger. Both pieces of equipment were decontaminated between diggings with first, a soap and water brushing, second, a deionized water spray rinse, third, a combination deionized water/isopropanol spraying, and finally, a deionized water rinse.

The PVC well screen and riser sections were rinsed with deionized water, assembled, inserted into the dug holes, and driven (using a rubber headed mallet) to advance the screen as far as possible below the water table (usually about three feet). The annular space was then backfilled with SACRETE brand all-purpose sand.

Prior to collection of groundwater samples at the wells, depth to water, depth of the well, and height of the well casing above ground surface were measured in order to calculate the appropriate volume of water to be purged before sampling. The wells were purged by pumping three to five well volumes using an ISCO Model 1580 Superspeed peristaltic pump.

When an appropriate volume of water had been purged, the samples for metals analysis and for field measurements of pH, temperature, and specific conductivity were collected through the pump unit. Pump tubing was decontaminated between wells by running approximately one liter of 1:1 deionized water and isopropanol through the tubing followed by one liter of deionized water. The outside of the tubing was spray rinsed using deionized water, then 1:1 water and isopropanol, and finally deionized water.

Samples for organic parameters were collected using an 80 ml stainless steel bailer. Semi-volatile sample containers were lined up adjacent to the well where equal volumes were alternately poured into each container until all were filled. The containers were then capped, placed in coolers, and packed with ice. The 40 ml volatile organic sample containers were filled to overflowing, immediately capped, and also placed in the cooler.

The stainless steel bailer was decontaminated between wells by brushing with a soap and deionized water mixture and rinsing with deionized water, then 1:1 water and isopropanol, and finally deionized water. The bailer cord was discarded after sampling each well.

Sampler blanks were collected for metals, volatile organics and semi-volatile organics. The metals blanks were collected through the pump tubing (after decontamination) using blank water prepared by the BCEQCB Environmental Laboratory. Volatile and semi-volatile organic sampler blanks were collected by pouring the blank water into the decontaminated bailer and then into the sample containers.

5.0 WASTE TYPES AND QUANTITIES

The following section provides information about the wastes generated at Boston Printing. This information was gathered during the file review and reconnaissance interview.

5.1 Waste Types

Boston Printing generates liquid wastes during the photographic development process. The process water goes through two silver recovery units in series, and the supernatant is directly discharged to the drainfield (sampled on a monthly basis). Sanitary wastes from the facility go to a septic tank and drainfield. Solid wastes are deposited in an on-site dumpster.

5.2 Waste Quantities

Waste photographic chemicals are generated at approximately 1-3 gallons per day. The recovered silver (in liquid form) is stored in drums. Approximately one-half liter per hour is collected from developer machines in five-gallon pails. Solvents used on rags for cleaning photographic chemicals used at the facility are in enclosed systems and some volatilization may occur.

No chemical consumption records are kept by Boston Printing.

5.3 Waste Disposal Methods

Recovered silver stored in drums is removed by a licensed hauler. Rags used for cleaning are picked up by an industrial laundry. Solid wastes deposited in the on-site dumpster are removed by the municipal trash hauler.

The sanitary wastes at Boston Printing go to a septic system and drainfield. The industry process wastewater is discharged to an on-site drainfield after it is treated by two (Polychrome SM 75) silver recovery units.

6.0 SAMPLING RESULTS

The following sections describe the results of chemical analyses and the quality assurance review of the data collected at Boston Printing.

6.1 Results of Chemical Analysis

The data from laboratory analysis and field measurements are presented in Table 1. It can be seen that Florida Secondary Drinking Water Standards were exceeded for iron (ranging from 0.35 mg/1 to 0.66 mg/1) in all sampling locations. GW-1 also contained 43 ug/1 acetone. No other organic contaminants were detected at the site.

6.2 Quality Assurance Review

Sample collection procedures and analyses were conducted in accordance with Jordan's Quality Assurance Project Plan. Field procedures followed at Boston Printing are described in Section 4.2. All samples and blanks for elemental analysis were preserved with 1 ml of nitric acid. Oil and grease samples were preserved with 1.5 mls of sulfuric acid.

A trip blank, prepared in advance at Jordan's laboratory, was analyzed for volatile organics. This trip blank was sent for analysis on December 19, 1985, along with samples from both Boston Printing and Bradley Aviation. No volatile organics above the minimum reportable concentrations (MRC) were detected in the trip blank. A sampler blank was collected before sampling of station GW-1 following the procedure described in section 4.2. All chemicals in the sampler blank were below MRC, except iron (0.12 mg/1). Duplicate water samples were collected at location GW-2. The results of the duplicate laboratory analyses were within acceptable limits. Metals detected in GW-2 and the duplicate from that location include copper (0.006 mg/1 and 0.006 mg/1), iron (0.66 mg/1 and 0.44 mg/1), manganese (0.037 mg/1 and 0.038 mg/1), and zinc (0.007 mg/1 and 0.006 mg/1).

7.0 TOXICOLOGICAL/CHEMICAL CHARACTERISTICS

Acetone is known to be a skin and eye irritant at high levels (500 mg/1 or above). The level at which acetone was detected in GW-1 is considerably below the level at which it is a health concern.

Iron exceeds Florida Secondary Drinking Water Standards in all wells at Boston Printing. These regulations have been established primarily to minimize objectionable taste and appearance. Little or no likelihood of toxicity from iron in drinking water is expected and iron is considered to be an essential nutrient for human health.

8.0 CONCLUSIONS AND RECOMMENDATIONS

The following is a summary of results from sampling at Boston Printing, along with recommendations for further action at the site.

8.1 Conclusions

Analyses of laboratory and field data collected from Boston Printing indicate the following:

- Groundwater from GW-1, near a drum storage area, contained 43 ug/1 of acetone. No other organic contamination was detected at the site.
- Analyses of groundwater from the four wells installed at the site detected levels of iron which exceed Florida Secondary Drinking Water Standards. No other metals exceeded standards.

- None of the chemicals found in groundwater samples from the site is used at Boston Printing.

8.2 Recommendations

Boston Printing does not use acetone in its printing operations. However the previous occupant, Hollingsworth Solderless Terminal Company is known to have contaminated groundwater near to the site and may have used acetone. The levels of acetone found at the site are below the levels which effect human health, an assessment of the extent and movement of acetone in the groundwater at the site and in the surrounding area is recommended, unless the probelm is addressed by the cleanup of the Hollingsworth Superfund site.

TABLES

TABLE 2 SAMPLING SUMMARY
BOSTON PRINTING

TABLE 1
SUMMARY OF CHEMICAL CONSTITUENTS IN
GROUNDWATER SAMPLES AT
BOSTON PRINTING CO.

ical Group / leme	Drinking Water Standards	GW-1	GW-2	GW-DUP	GW-3	GW-4	Sampler Blank	Tri Blan
(mg/L)								
enic	0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
um	1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
um	0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
ium	0.05	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	
	1	0.006	0.008	0.008	0.007	0.005	0.005	
	0.3	0.43 a/	0.68 a/	0.40 a/	0.35 a/	0.54 a/	0.54 a/	
	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
	0.05	0.011	0.037	0.038	0.012	0.10	0.12	
	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	
	0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	
	0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	
	5	<0.005	0.007	0.006	<0.005	<0.005	<0.005	
(ug/L)								
ce		43.0	ND	ND	ND	ND	ND	NA
		ND	ND	ND	ND	ND	ND	
		<5	<5	<5	ND	ND	ND	
		6.5	<5	ND	ND	ND	ND	
		22.0						
		906						
		8.0	8.0	8.0	<5	<5	ND	
		26.8	NA	25.9	ND	ND	ND	
		1100	NA	321	ND	ND	ND	
					NA	NA	NA	
					NA	NA	NA	
					NA	NA	NA	
					NA	NA	NA	
					NA	NA	NA	
					NA	NA	NA	

aum Reportable Concentrations (MRC).
ing Water Standards.
1.

" PVC well (4.75
the

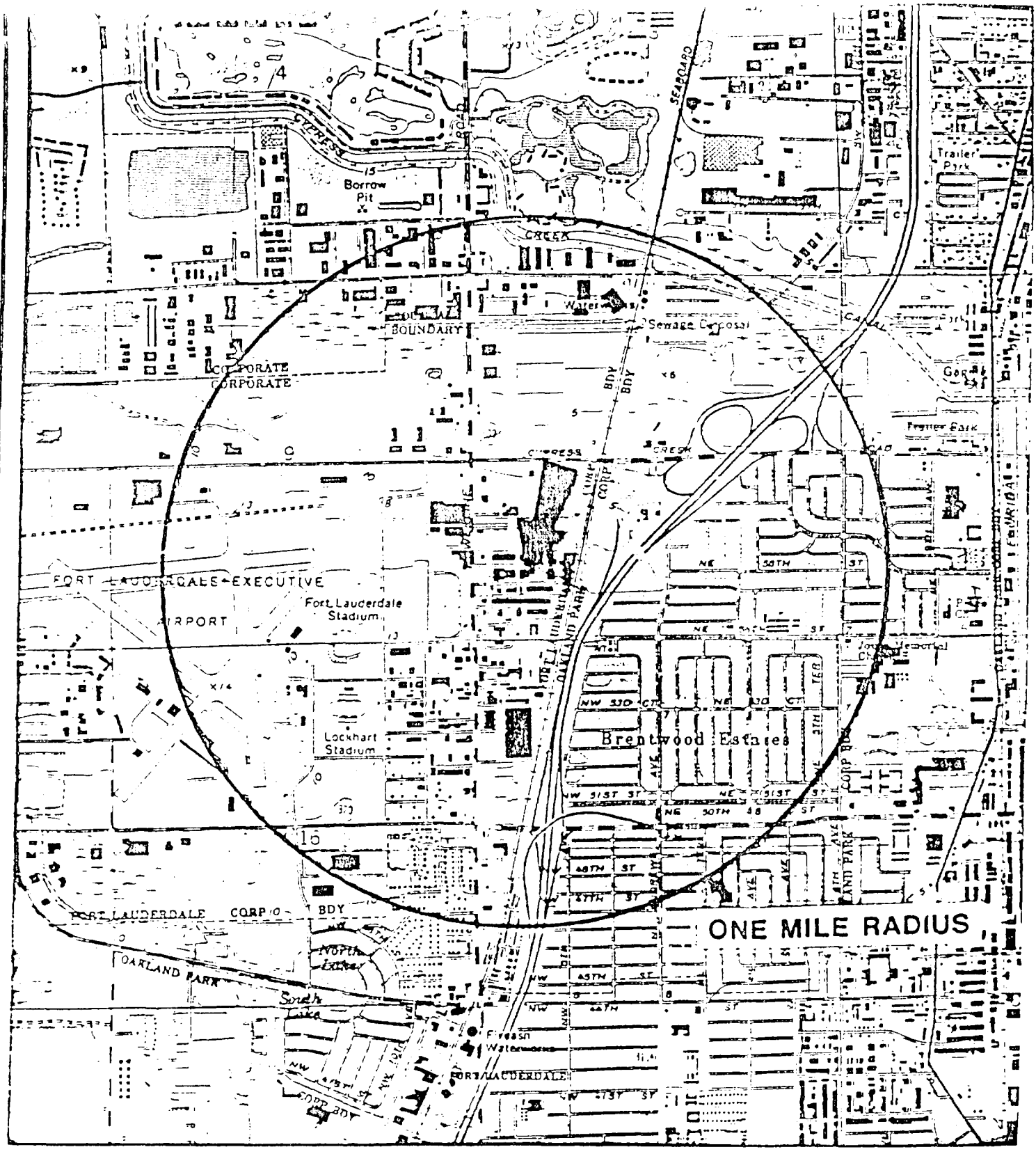
hen

2.86.180
0009.0.0

TABLE 2 SAMPLING SUMMARY
BOSTON PRINTING

SAMPLE	COMMENTS
GW-1	Taken from a shallow hand augered 1.25" PVC well (4.75 feet deep) which was located 38.0 feet from the northwest corner and 37.0 feet from the northeast corner of the of the fence surrounding the drum storage area. Depth to water was 2.75 feet. The recharge rate of the well was faster than the pumping rate of the peristaltic pump. The water was slightly turbid for the metals sample, but grew more turbid when bailing to collect the organics samples.
GW-2	Taken from a shallow hand augered 1.25" PVC well (5.0 feet deep) which was located 23.3 feet from the northeast corner of the building and 30.3 feet from the northeast corner of the bottom step of the staircase on the north side of the building. Depth to water was 2.8 feet. The recharge rate of the well was slower than the pumping rate of the peristaltic pump. The water was slighlty turbid for the metals sample, but grew more turbid when bailing to collect the organics samples.
GW-3	Taken from a shallow hand augered 1.25" PVC well (5.0 feet deep) which was located 12 feet south of the northeast corner of the fence on the east of th site, and 1 foot in from the pavement. Depth to water was 2.6 feet. The recharge rate of the well was faster than the pumping rate of the peristaltic pump. The water was slightly turbid for the metals sample, but grew more turbid when bailing to collect the organics samples.
GW-4	Taken from a shallow hand augered 1.25" PVC well (5.0 feet deep) which was located 16.0 feet north and 2 feet west of the southeast corner of the fence on the east side of the site. Depth to water was 3.0 feet. The recharge rate of the well was faster than the pumping rate of the peristaltic pump. The water was slightly turbid for the metals sample, but grew more turbid when bailing to collect the organics samples.

FIGURES OF THE SITE



SCALE 1 : 24000

0 1/2 1 MILE

1000 0 1000 2000 FEET

N

FIGURE 1

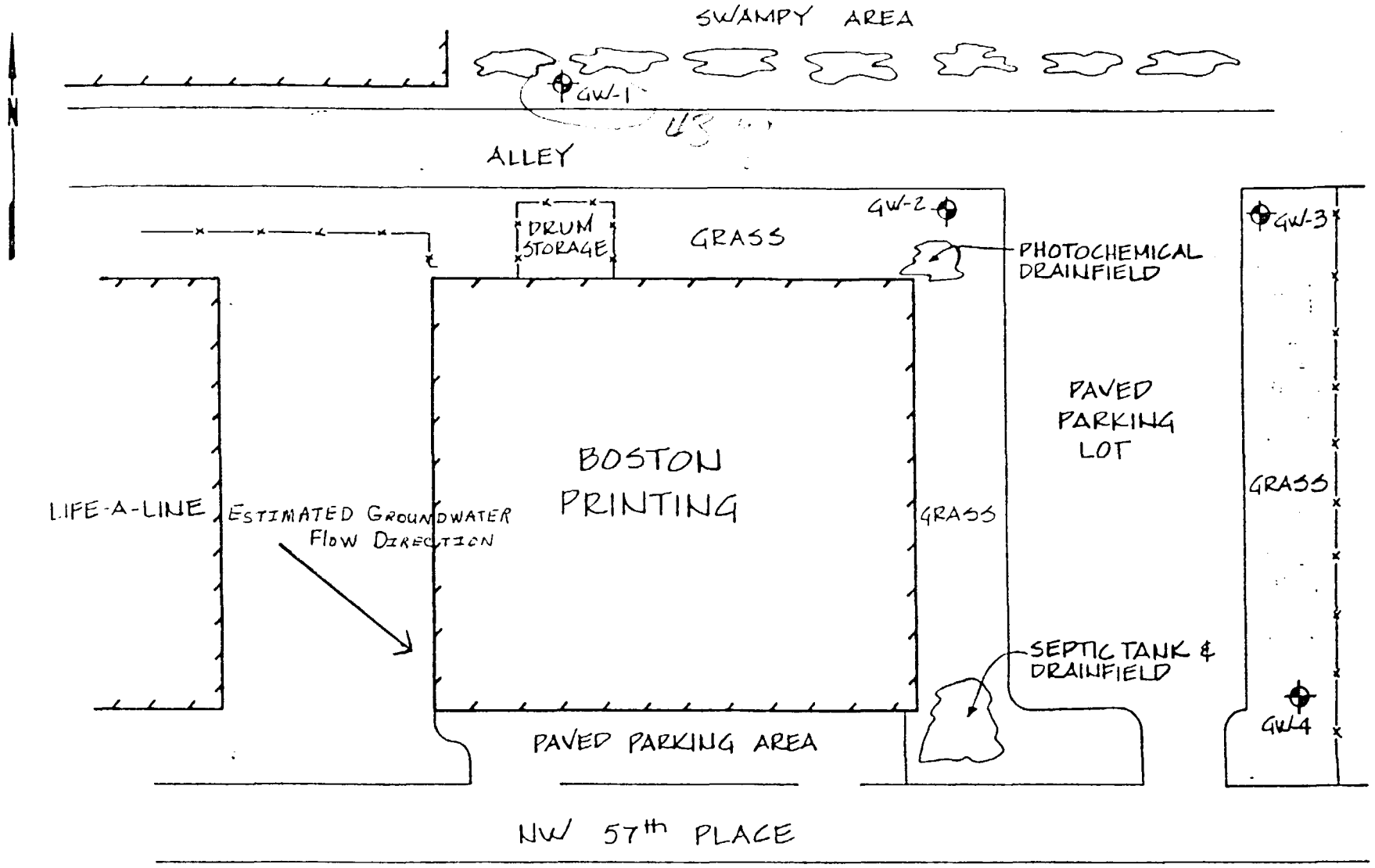
SITE LOCATION MAP

Boston Printing Co., Inc.
741 NW 57th PL

USGS QUAD Ft. Lauderdale, North

DATE 199

ECJORDANCO



NOT TO SCALE

NOTE: GROUNDWATER SAMPLE FROM SHALLOW PVC WELL UNLESS OTHERWISE NOTED.

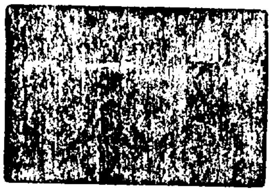
- GROUNDWATER SAMPLE - GW
- SEDIMENT SAMPLE - SD
- SOIL SAMPLE - SL
- SURFACE WATER SAMPLE - SW
- LOCATION OF PHOTOGRAPH SHOWING DIRECTION OF CAMERA

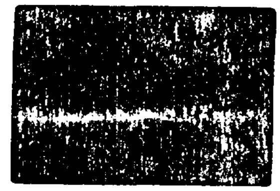
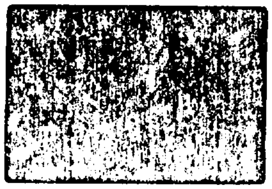
FIGURE 2
PLOT PLAN

SITE:	DATE SAMPLED:
BOSTON PRINTING	12/19/86
APPROX. AREA OF SITE: 0.5 acres	EC JORDAN CO.

APPENDIX A

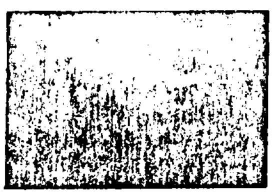
PHOTOGRAPHS OF THE SITE

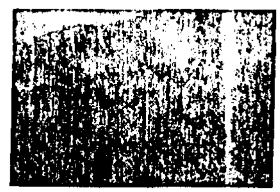


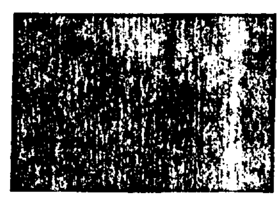



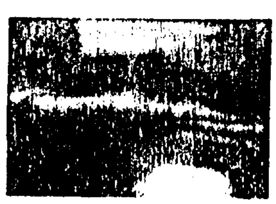
APPENDIX B

UM ONS LYSES







E.C. JORDAN CO.

ENVIRONMENTAL LABORATORY SERVICES

MINIMUM REPORTABLE CONCENTRATIONS
HAZARDOUS SUBSTANCE LIST ORGANICS
ROUTINE ANALYTICAL SERVICES

3.86.67
0002.0.0

APPENDIX B

MINIMUM REPORTABLE CONCENTRATIONS (MRC's) OF ORGANIC ANALYSES

ORGANOCHLORINE PESTICIDES AND PCBs
MINIMUM REPORTABLE CONCENTRATIONS

COMPOUND	WATER (µg/ℓ)[1]	SOIL (µg/kg)[2]
Aldrin	0.004	2.0
α-BHC	0.003	2.0
β-BHC	0.003	2.0
δ-BHC	0.009	2.0
γ-BHC (Lindane)	0.003	2.0
Chlordane	0.014	20
4,4'-DDD	0.011	4.0
4,4'-DDE	0.004	4.0
4,4'-DDT	0.012	4.0
Dieldrin	0.002	4.0
Endosulfan I	0.014	2.0
Endosulfan II	0.004	4.0
Endosulfan sulfate	0.066	4.0
Endrin	0.006	4.0
Endrin aldehyde	0.023	4.0
Endrin ketone	0.040	4.0
Heptachlor	0.003	2.0
Heptachlor epoxide	0.083	2.0
Methoxychlor	0.100	20
Toxaphene	0.24	40
PCB-1016	0.065	20
PCB-1221	0.065	20
PCB-1232	0.065	20
PCB-1242	0.065	20
PCB-1248	0.065	20
PCB-1254	0.065	40
PCB-1260	0.065	40

[1] 40 CFR Part 136, Friday, October 26, 1984, Method No. 608, pp. 43321-43336.

[2] Preparation: Caucus Organics Protocol. Analysis: ibid.

VOLATILE ORGANIC COMPOUNDS
MINIMUM REPORTABLE CONCENTRATIONS

COMPOUND	WATER (µg/ℓ)[1]	SOIL (µg/kg)[2]
Acetone	10	400
Benzene	10	400
Bromodichloromethane	10	400
Bromoform	10	400
Bromomethane	10	400
2-Butanone	10	400
Carbon disulfide	10	400
Carbon tetrachloride	10	400
Chlorobenzene	10	400
Chloroethane	10	400
2-Chloroethylvinyl ether	10	400
Chloroform	10	400
Chloromethane	10	400
Dibromochloromethane	10	400
1,1-Dichloroethane	10	400
1,2-Dichloroethane	10	400
1,1-Dichloroethene	10	400
trans-1,2-Dichloroethene	10	400
1,2-Dichloropropane	10	400
cis-1,3-Dichloropropene	10	400
trans-1,3-Dichloropropene	10	400
Ethylbenzene	10	400
2-Hexanone	10	400
4-Methyl 2-Pentanone	10	400
Methylene chloride	10	400
Styrene	10	400
1,1,2,2-Tetrachloroethane	10	400
Tetrachloroethene	10	400
1,1,1-Trichloroethane	10	400
1,1,2-Trichloroethane	10	400
Trichloroethene	10	400
Trichlorofluoromethane[3]	10	400
Toluene	10	400
Vinyl acetate	10	400
Vinyl chloride	10	400
Total xylenes	10	400

[1] 40 CFR Part 136, Friday, October 26, 1984, Method No. 624, pp. 43373-43384.

[2] Preparation - Aqueous Extraction Procedure: "Development of Analytical Test Procedures for the Measurement of Organic Priority Pollutants in Sludge and Sediments," Midwest Research Institute Final Report, EPA Contract No. 68-03-2695, June 26, 1979. Analysis - ibid.

[3] Priority pollutant only.

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BASE/NEUTRAL EXTRACTABLES
MINIMUM REPORTABLE CONCENTRATIONS

COMPOUND	WATER (µg/ℓ)[1]	SOIL (µg/kg)[2]
Acenaphthene	10	330
Acenaphthylene	10	330
Aniline	10	330
Anthracene	10	330
Aldrin	10	330
Benzo(a)anthracene	10	330
Benzo(b)fluoranthene	10	330
Benzo(k)fluoranthene	10	330
Benzo(a)pyrene	10	330
Benzo(g,h,i)perylene	10	330
Benzyl alcohol	10	330
β-BHC	10	330
δ-BHC	10	330
bis(2-Chloroethyl)ether	10	330
bis(2-Chloroethoxy)methane	10	330
bis(2-Chloroisopropyl)ether	10	330
bis(2-Ethylhexyl)phthalate	10	330
4-Bromophenyl phenyl ether	10	330
Butylbenzylphthalate	10	330
Chlordane	10	330
4-Chloroaniline	10	330
2-Chloronaphthalene	10	330
4-Chlorophenyl phenyl ether	10	330
Chrysene	10	330
4,4'-DDD	10	330
4,4'-DDE	10	330
4,4'-DDT	10	330
Dibenzo(a,h)anthracene	10	330
Dibenzofuran	10	330
Di-n-butylphthalate	10	330
1,3-Dichlorobenzene	10	330
1,2-Dichlorobenzene	10	330
1,4-Dichlorobenzene	10	330
3,3'Dichlorobenzidine	10	330
Dieldrin	10	330
Diethylphthalate	10	330
Dimethylphthalate	10	330
2,4-Dinitrotoluene	10	330
2,6-Dinitrotoluene	10	330
Di-n-octylphthalate	10	330
Endosulfan sulfate	10	330
Endrin aldehyde	10	330

BASE/NEUTRAL EXTRACTABLES
(continued)

COMPOUND	WATER (µg/ℓ)[1]	SOIL (µg/kg)[2]
Fluoranthene	10	330
Fluorene	10	330
Heptachlor	10	330
Heptachlor epoxide	10	330
Hexachlorobenzene	10	330
Hexachlorobutadiene	10	330
Hexachloroethane	10	330
Indeno(1,2,3-c,d)pyrene	10	330
Isophorone	10	330
2-Methylnaphthalene	10	330
Naphthalene	10	330
Nitrobenzene	10	330
2-Nitroaniline	10	330
3-Nitroaniline	10	330
4-Nitroaniline	10	330
N-Nitrosodi-n-propylamine	10	330
PCB-1016	10	330
PCB-1221	10	330
PCB-1232	10	330
PCB-1242	10	330
PCB-1248	10	330
PCB-1254	10	330
PCB-1260	10	330
Phenanthrene	10	330
Pyrene	10	330
Toxaphene	10	330
1,2,4-Trichlorobenzene	10	330

[1] 40 CFR Part 136, Friday, October 26, 1984. Method No. 625, pp. 43385-43406.

[2] Preparation: Caucus Organics Protocol. Analysis: ibid.

ACID EXTRACTABLES
MINIMUM REPORTABLE CONCENTRATIONS

COMPOUND	WATER (µg/ℓ)[1]	SOIL (µg/kg)[2]
Benzoic acid	10	330
4-Chloro-3-methylphenol	10	330
2-Chlorophenol	10	330
2,4-Dichlorophenol	10	330
2,4-Dimethylphenol	10	330
2,4-Dinitrophenol	10	330
2-Methylphenol	10	330
4-Methylphenol	10	330
2-Methyl-4,6-dinitrophenol	10	330
2-Nitrophenol	10	330
4-Nitrophenol	10	330
Pentachlorophenol	10	330
Phenol	10	330
2,4,5-Trichlorophenol	10	330
2,4,6-Trichlorophenol	10	330

ADDITIONAL EXTRACTABLE PARAMETERS
MINIMUM REPORTABLE CONCENTRATIONS

COMPOUND	WATER (µg/ℓ)[1]	SOIL (µg/kg)[2]
Benzidine	10	330
α-BHC	10	330
γ-BHC	10	330
Endosulfan I	10	330
Endosulfan II	10	330
Endrin	10	330
Hexachlorocyclopentadiene	10	330
N-Nitrosodimethylamine	10	330
N-Nitrosodiphenylamine	10	330

[1] 40 CFR Part 136, Friday, October 26, 1984. Method No. 625, pp. 43385-43406.

[2] Preparation: Caucus Organics Protocol. Analysis: ibid.

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METALS
MINIMUM REPORTABLE CONCENTRATIONS (MRC's)

COMPOUND	WATER (UG/L)	SOIL (MG/KG)	EP-TOXICITY (UG/L)
Arsenic	5	1.0	5
Barium	100	50.0	100
Cadmium	2	1.0	2
Chromium	5	2.5	5
Copper	5	2.5	NA
Iron	5	2.5	NA
Lead	2	10.0	20
Manganese	5	2.5	NA
Mercury	1.0	0.5	1.0
Selenium	5	1.0	5
Silver	5	2.5	5
Zinc	5	2.5	NA

SITE INSPECTION REPORT

FOR

BOSTON PRINTING CO., INC.
FT. LAUDERDALE, BROWARD COUNTY, FLORIDA
FLD073869414

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FL	D073869414

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER					
Boston Printing Co., Inc.	741 NW 57th Place					
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**		**07 COUNTY CODE**	**08 CONG DIST**
Ft. Lauderdale	FL	33309	Broward		011	17

09 COORDINATES LATITUDE	LONGITUDE
26 12 0 0.0	08 0 0 9 0 0.0

10 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER _____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
10 / 1 / 85 (MONTH DAY YEAR)	☒ ACTIVE ☐ INACTIVE	1981 (BEGINNING YEAR) / Present (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☐ E. STATE ☒ F. STATE CONTRACTOR E.C. Jordan Co. (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
David Wilderman	Field Geologist	E.C. Jordan	(904) 656-1293
09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Chuck Goodwin	Environmental Tech.	E.C. Jordan	(904) 656-1293
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Bruce Hayes	Asst. Operator	Same	(305) 491-2121
George Stern	Owner		( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	8:30 A-11:30	Fair to Pt. Cloudy/82°/85% Humidity

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Eric Nuzie	FDER	(904) 488-0190

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Willard Murray	N/A	E.C. Jordan Co.	207-775-5401	2 10 86 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE: FL | 02 SITE NUMBER: D073869414

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER _____ (Specify)
- ☐ E. SLURRY
- ☒ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)

- TONS: unknown
- CUBIC YARDS: unknown
- NO. OF DRUMS: unknown

03 WASTE CHARACTERISTICS (Check all that apply)

- ☐ A. TOXIC
- ☐ B. CORROSIVE
- ☒ C. RADIOACTIVE
- ☒ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☒ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☒ K. REACTIVE
- ☒ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			Recovered silver is stored in drums and picked up by a licensed hauler.
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	unknown		
IOC	INORGANIC CHEMICALS	unknown		
ACD	ACIDS			
BAS	BASES	unknown		
MES	HEAVY METALS	unknown		

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
MES	Silver	7440-22-4	DR	unknown	
OCC	N-Propanol	71-23-8	Drainfield	unknown	
OCC	Benzyl Alcohol	100-51-6	Drainfield	unknown	
OCC	Hydroquinone	123-31-9	Drainfield	unknown	
BAS	Potassium Hydroxide	1310-58-3	Drainfield	unknown	

V. FEEDSTOCKS (See Appendix for CAS Numbers) N/A

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E.C. Jordan Co. site inspection, 10/1/85
See attached reference list.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FL	D073869414

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 10,000+
02 ☒ OBSERVED (DATE: 12-19-85) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Acetone was detected in the groundwater behind the facility at 43 ug/l. This well is located near the drum storage area. Iron was detected in all wells and ranged from 0.35 mg/l to 0.66 mg/l (Table 1).

01 ☒ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 10,000+
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Potential leaks in the effluent piping system could lead to surface spills which in turn could impact a pond 1500 ft. southwest of the site. Past malfunctions of the septic drainfield system have caused standing water on-site. No surface water samples have been taken.

01 ☒ C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: 1-100
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Inspectors at the site noticed a strong solvent odor both inside and outside the building. PI meter readings in the building were as high as 28 ppm.

01 ☒ D. FIRE/EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: 1-100
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
N-propanol, which is used on-site, is flammable. There have been no reports of past fires at the site.

01 ☒ E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: 1-100
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Workers may come in direct contact with volatile and toxic chemicals during work related activities.

01 ☒ F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: 0.5 (Acres)
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Spills or leaks of solvents may contaminate soil which surrounds the facility.

01 ☒ G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 10,000+
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
This facility is located 2,000 feet east of a drinking water well. Contaminants in the groundwater may reach this well.

01 ☒ H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: 1-100
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Workers may come in direct contact with volatile and toxic chemicals during work related activities. PI meter readings in the building were as high as 28 ppm.

01 ☒ I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED: 10,000+
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Population may be exposed to contaminants via groundwater, surface water, drinking water, soil, and direct contact.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: FL | 02 SITE NUMBER: D073869414

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Contact with contaminants may damage plant life. There have been no observed or reported damages to the plant life on-site.

01 ☒ K. DAMAGE TO FAUNA
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

Contact with contaminants may injure wildlife. The facility is located in a commercial/industrial area which is largely devoid of wildlife.

01 ☒ L. CONTAMINATION OF FOOD CHAIN
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Silver, which is recovered at the site, is persistent in the environment and may contaminate the food chain.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids/Leaking drums)
02 ☒ OBSERVED (DATE: 6/8/84) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 1-100
04 NARRATIVE DESCRIPTION

The industrial drainfield on-site failed, and standing water collected on-site (6/8/84). No tests were made on the standing water or soil. BCEQCB issued an NOV on 7/12/84.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None observed or reported.

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None observed or reported. This facility is not connected to a municipal sewage system.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None observed or reported.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None known.

III. TOTAL POPULATION POTENTIALLY AFFECTED: 10,000+

IV. COMMENTS

Samples of the effluent from the silver recovery system have been taken by BCEQCB (2/12/85). The effluent has contained methylene chloride (9.6 mg/l), chloroform (47 mg/l) and bromodichloromethane (11.4 mg/l). Other sampling found no problems.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E.C. Jordan Co. site inspection, 10/1/85
See attached reference list.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FL	D073869414

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☒ I. OTHER (Specify) (WRMD)	APPL.# 304	10/85	Unknown	Wellfield Protection Ordinance.
☒ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND	15	55 gal
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)

- ☐ A. INCINERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☒ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify)

05 OTHER

☒ A. BUILDINGS ON SITE

1

06 AREA OF SITE

0.5 (Acres)

07 COMMENTS

Two silver recovery units were installed in 1984 (polychrom unit SM-75) to treat the effluent before it is discharged into a drainfield on the north side of the building.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☐ C. INADEQUATE, POOR ☒ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Drums were located on a fenced, asphalt pad. The fence was unlocked at time of inspection. Approx. 6 rusty drums were stacked by the road (north end). Apparently awaiting pickup. A strong solvent odor was detected in the facility. Inspectors experienced dizziness and tightness in lungs. Odor was detected outside building as well.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☒ YES ☐ NO

02 COMMENTS

Drums are located in and around an open fenced area on the north side of the building.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

E.C. Jordan Co. site inspection, 10/1/85
See attached reference list.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE: FL | 02 SITE NUMBER: D073869414

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☐	B. ☒
NON-COMMUNITY	C. ☐	D. ☐

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☒	C. ☐
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE

A. 0.4 (mi)

B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☒ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING (Other sources available) ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Other sources available) ☐ D. NOT USED, UNUSEABLE

☐ COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available)

02 POPULATION SERVED BY GROUND WATER: 226,430 (1975)

03 DISTANCE TO NEAREST DRINKING WATER WELL: 0.4 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
3.0 (ft)	varies *	3.0 (ft)	100 million (gpd)	☐ YES ☐ NO

09 DESCRIPTION OF WELLS (Including use, depth, and location relative to population and direction)

The facility is located approximately 2000 feet east of a municipal drinking water well.

10 RECHARGE AREA		11 DISCHARGE AREA	
☒ YES ☐ NO	COMMENTS: Infiltration at Boston Printing recharges the Biscayne aquifer.	☐ YES ☒ NO	COMMENTS

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☒ A. RESERVOIR, RECREATION, DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Cypress Creek Canal	☐	1 (mi)
	☐	(mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 10,000+ NO. OF PERSONS	B. 10,000+ NO. OF PERSONS	C. 10,000+ NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION: 0.2 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE	04 DISTANCE TO NEAREST OFF-SITE BUILDING
3001-10000	0.1 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

The Boston Painting Co. is located 0.6 miles east of the Ft. Lauderdale Executive Airport. Densly populated residential areas are located within .2 miles to east of the site.

EPA FORM 2070-13 (7-81)

* Prior to 1979, groundwater beneath the site flowed west, toward the municipal wells. Since 1979, groundwater beneath the site is estimated to flow toward the southeast (Geraghty and Miller, 1985).

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FL	D073869414

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☐ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☒ D. GREATER THAN 10^{-3} cm/sec *

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☒ C. RELATIVELY PERMEABLE* ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
unknown (ft)	unknown (ft)	unknown

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
8.0 (in)	4.5 (in)	0-1° %	flat	0-1° %

09 FLOOD POTENTIAL

SITE IS IN 100 YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE: A. _____ (mi) OTHER: B. 2.5 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

unknown (mi)

ENDANGERED SPECIES: Manatee, Eastern Brown Pe ~~Sandhill Crane~~

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AG LAND
A. 0.1 (mi)	B. 0.2 (mi)	C. > 5 (mi)	D. > 5 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The site and the surrounding area is flat. Local variations in topography are less than three feet.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sampling results)

E.C. Jordan Co. site inspection, 10/1/85
See attached reference list.

* Saturated hydraulic co[illegible]ivity at the [illegible]ecutive/Prospect wellfield has been modeled as [illegible]0[illegible] [illegible]ghby and Mi[illegible], 1985.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
FL	D073869414

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	4	E.C. Jordan Laboratory, Portland, Maine	1/86
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER	(2) blanks	E.C. Jordan Laboratory, Portland, Maine	1/86

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS			
	GW-1	GW-2	GW-3	GW-4
pH	6.5	6.0	6.0	NA*
Conductivity(umhos)	906	1100	321	NA*
Temperature (°C)	22.0	26.8	25.9	NA*

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF FDER Tallahassee, FL
(Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS FDER - Tallahassee

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

None Collected

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E.C. Jordan Co. site inspection, 10/1/85
See attached reference list.

EPA FORM 2070-13(7-81)

* NA= Not Analyzed

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
FL	D073869414

II. CURRENT OWNER(S) / PARENT COMPANY (If applicable)

01 NAME Boston Printing Co., Inc.		02 D+B NUMBER	08 NAME M & G Stern Corp.			09 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) 741 NW 57th PL		04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.) Same			11 SIC CODE
05 CITY Ft. Lauderdale	06 STATE FLA	07 ZIP CODE 33309	12 CITY		13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER	08 NAME			09 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)			11 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	12 CITY		13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER	08 NAME			09 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)			11 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	12 CITY		13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER	08 NAME			09 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)			11 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	12 CITY		13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first) / IV. REALTY OWNER(S) (If applicable; list most recent first)

01 NAME Hollingsworth Solderless Terminal Co.		02 D+B NUMBER	01 NAME N/A		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.) 700 N. 57th PL		04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE
05 CITY Ft. Lauderdale	06 STATE FL	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
01 NAME		02 D+B NUMBER	01 NAME		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
01 NAME		02 D+B NUMBER	01 NAME		02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E.C. Jordan Co. site inspection, 10/1/85
See attached reference list.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FL	D073869414

II. CURRENT OPERATOR (Provide if different from owner)

OPERATOR'S PARENT COMPANY (If applicable)

01 NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
Boston Printing Co.		M & G Stern Corp.	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
741 NW 57th Place		Same	

05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
Ft. Lauderdale	FL	33309			

08 YEARS OF OPERATION	09 NAME OF OWNER
4	George Stern

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

01 NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
Hollingsworth Solderless Terminal Co.		N/A	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
741 NW 57th Place			

05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
Ft. Lauderdale	FL	33309			

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD
unknown	unknown

01 NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

01 NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E.C. Jordan Co. site inspection, 10/1/85
See attached reference list.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FL	D073869414

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
Boston Printing Co.	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
741 NW 57th Place	

05 CITY	06 STATE	07 ZIP CODE
Ft. Lauderdale	FL	33309

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
None			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Chemical Conservation Corp.			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
653 Rocket Blvd.			
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
Orlando	FL / 32824		
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E.C. Jordan Co. site inspection, 10/1/85
See attached reference list.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
FL	D073869414

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FL	D073869414

II. PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED 04 DESCRIPTION	02 DATE	03 AGENCY
None		
01 ☐ S. CAPPING/COVERING 04 DESCRIPTION	02 DATE	03 AGENCY
None		
01 ☐ T. BULK TANKAGE REPAIRED 04 DESCRIPTION	02 DATE	03 AGENCY
None		
01 ☐ U. GROUT CURTAIN CONSTRUCTED 04 DESCRIPTION	02 DATE	03 AGENCY
None		
01 ☐ V. BOTTOM SEALED 04 DESCRIPTION	02 DATE	03 AGENCY
None		
01 ☐ W. GAS CONTROL 04 DESCRIPTION	02 DATE	03 AGENCY
None		
01 ☐ X. FIRE CONTROL 04 DESCRIPTION	02 DATE	03 AGENCY
None		
01 ☐ Y. LEACHATE TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
None		
01 ☐ Z. AREA EVACUATED 04 DESCRIPTION	02 DATE	03 AGENCY
None		
01 ☐ 1. ACCESS TO SITE RESTRICTED 04 DESCRIPTION	02 DATE	03 AGENCY
None		
01 ☐ 2. POPULATION RELOCATED 04 DESCRIPTION	02 DATE	03 AGENCY
None		
01 ☐ 3. OTHER REMEDIAL ACTIVITIES 04 DESCRIPTION	02 DATE	03 AGENCY
None		

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sampling results, reports)

E.C. Jordan Co. site inspection, 10/1/85
See attached reference list.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION

01 STATE | 02 SITE NUMBER
FL | D073869414

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☒ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

Several Notices of Violation have been issued to Boston Printing stemming from a failed drainfield. In response to these actions, Boston Printing has installed a new drainfield, as well as two silver recovery units to treat their effluent prior to discharge into the drainfield.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E.C. Jordan Co. site inspection, 10/1/85
See Attached reference list.

REFERENCES

REFERENCES

1. Florida Department of Environmental Regulation, CERCLA Site Screening Folder, 2600 Blairstone Road, Tallahassee, Florida.

2. U.S. Geological Survey, Topographic Map, 1:24,000 Series,

3. "Documentation Requirements for CERCLA Site Screening Program," Project for Performance of Remedial Response Activities at Uncontrolled Hazardous Waste Substance Facilities--Zone 1, NUS Corporation, Superfund Division.

4. Potential Hazardous Waste Site, Preliminary Assessment, 1985. EPA Form 2070-12, RCRA 3012 Program, prepared for the Florida DER by E.C. Jordan Co.

5. Site Investigation, CERCLA Site Screening Program, E.C. Jordan Co., 1985.

6. Heath, R.C., and C.S. Conover, Hydrologic Almanac of Florida, 1981. USGS Open-File Report 81-1107, Tallahassee, Florida.

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9. Terhune, F.W. (Editor), 1983 Florida Statistical Abstract, 1983. Bureauof Economic and Business Research, College of Business Administration, University of Florida.

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12. Leach, S.D., Projected Public Supply and Rural Water Use in Florida Through Year 2020, 1984. U.S. Geological Survey.

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20. Windhole, M. A., (Editor), The Merck Index, 9th Edition, 1976. Merck and Co. Inc., Rahway, N.J.

21. Broward County Water Supply Assurance Program Future Well Field Site and Existing Well Field Zones of Influence, 1984.

22. Geraghty and Miller, Five Ash Well Field Groundwater Studies and Master Plan for Contaminant Removal Treatment at the Executive Airport and Prospect Well Fields, 1985.

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24. Hendry, L.C., Goodwin, T.M. and Labisky, R.F., Florida's Vanishing Wildlife, Florida Cooperative Extension Service Circular 485 (Revised), July, 1982.

25. Causavas, C. R., 1985, Geology of the Surficial Aquifer System, Broward County Florida, U.S. Geological Survey Water Resources Ivnestigation Report 84-4068, 167 p., 2 sheets.

Facility name: Boston Printing Co., Inc.

Location: 741 NW 57th Place, Ft. Lauderdale, Fl 33309

EPA Region: IV

Person(s) in charge of the facility: George Stern, owner

(Same address)

Name of Reviewer: Cortland S. Hill Date: 6/13/86

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

The facility, located approximately 3 blocks east of the Ft.Lauderdale Executive Airport, conducts film processing and printing operations. Silver, n-propanol, acetic acid, benzyl alcohol, hydroquinone, and potassium hydroxide are used in processing. Liquid wastes undergo silver recovery procedures, prior to being discharged to a subsurface drainfield. The original drainfield reportedly failed, and was replaced in 1985. Acetone was detected in groundwater adjacent to the site, during a recent inspection.

Scores: $S_M = (S_{gw} = 93.33 \; S_{sw} = 0.00 \; S_a = 0.00) = 53.95$

$S_{FE} = 0.00$

$S_{DC} = 0.00$

FIGURE 1
HRS COVER SHEET

Ground Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)		Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0	45	1	0	45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.						
2 Route Characteristics						3.2
Depth to Aquifer of Concern	0 1 2 (3)		2	6	6	
Net Precipitation	0 1 (2) 3		1	2	3	
Permeability of the Unsaturated Zone	0 1 2 (3)		1	3	3	
Physical State	0 1 2 (3)		1	3	3	
Total Route Characteristics Score				14	15	
3 Containment	0 1 2 (3)		1	3	3	3.3
4 Waste Characteristics						3.4
Toxicity/Persistence	0 3 6 9 12 15 (18)		1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)		1	8	8	
Total Waste Characteristics Score				26	26	
5 Targets						3.5
Ground Water Use	0 1 2 (3)		3	9	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 30 32 35 (40)		1	40	40	
Total Targets Score				49	49	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5				53,508	57,330	
7 Divide line 6 by 57,330 and multiply by 100			S_{gw} =	93.33		

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1		45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	0 1 2 3	1		3	
1-yr. 24-hr. Rainfall	0 1 2 3	1		3	
Distance to Nearest Surface Water	0 1 2 3	2		6	
Physical State	0 1 2 3	1		3	
Total Route Characteristics Score				15	
3 Containment	0 1 2 3	1		3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 18	1		18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				26	
5 Targets					4.5
Surface Water Use	0 1 2 3	3		9	
Distance to a Sensitive Environment	0 1 2 3	2		6	
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1		40	
Total Targets Score				55	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5				64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{SW} =			

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet N.A.					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1		45	5.1
Date and Location:					
Sampling Protocol:					
If line 1 is 0, the S_a = 0. Enter on line 5. If line 1 is 45, then proceed to line 2.					
2 Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
Total Targets Score				39	
4 Multiply 1 x 2 x 3				35,100	
5 Divide line 4 by 35,100 and multiply by 100		S_a =			

FIGURE 9
AIR ROUTE WORK SHEET

	S	S^2
Groundwater Route Score (S_{gw})	93.33	8711.11
Surface Water Route Score (S_{sw})	0	0
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		8711.11
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		93.33
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} \,/\, 1.73 = S_M =$		53.95

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet NOT RATED					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100		S_{FE} =			

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet					NOT RATED
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
[1] Observed Incident	0 45	1		45	8.1
If line [1] is 45, proceed to line [4] If line [1] is 0, proceed to line [2]					
[2] Accessibility	0 1 2 3	1		3	8.2
[3] Containment	0 15	1		15	8.3
[4] Waste Characteristics Toxicity	0 1 2 3	5		15	8.4
[5] Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 4 5	4		20	
Distance to a Critical Habitat	0 1 2 3	4		12	
	Total Targets Score			32	
[6] If line [1] is 45, multiply [1] x [4] x [5] If line [1] is 0, multiply [2] x [3] x [4] x [5]				21,600	
[7] Divide line [6] by 21,600 and multiply by 100		S_{DC} =			

FIGURE 12
DIRECT CONTACT WORK SHEET

DOCUMENTATION RECORD
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity - 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference. Include the location of the document.

FACILITY NAME: Boston Printing Co., Inc.

LOCATION: 741 NW 57th Place, Ft. Lauderdale, FL 33309

DATE SCORED: May 12, 1986

PERSON SCORING: Thomas H. Greenhalgh

PRIMARY SOURCE(S) OF INFORMATION (e.g., EPA region, state, FIT, etc.):

Site Inspection Report prepared by E.C. Jordan Co.
FDER File

FACTORS NOT SCORED DUE TO INSUFFICIENT INFORMATION:

COMMENTS OR QUALIFICATIONS:

GROUND WATER ROUTE

1 OBSERVED RELEASE No observed release. SCORE = 0 (Ref. 1)

Contaminants detected (5 maximum):

Rationale for attributing the contaminants to the facility:

Acetone was detected in the groundwater at Boston Printing Co., Inc., but only in upgradient (Ref. 15: Fig. 1-6) GW-1 wellwater (Ref.2: Table 1.0).

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern SCORE = 3

Name/description of aquifer(s) of concern

The Biscayne aquifer is a sole-source, very permeable, unconfined aquifer comprised chiefly of limestone, sandstone and sand. The thickness of the aquifer in the area is 240 feet and the top of the aquifer ranges in depth from sea level to 20 feet (Ref. 3).

Depth(s) from the ground surface to the highest seasonal level of the saturated zone (water table(s)) of the aquifer of concern:

2.6 feet (Ref. 2: Table 2)

Depth from the ground surface to the lowest point of waste disposal/ storage:

0 feet Photochemical waste discharged to subsurface drainfield (Ref. 2: Sec. 5.1).

Net Precipitation — SCORE = 2

Mean annual or seasonal precipitation (list months for seasonal):

60 inches/year (Ref. 6: pg. 53)

Mean annual lake or seasonal evaporation (list months for seasonal):

52 inches/year (Ref. 6: Fig. 13, inset)

Net precipitation (subtract the above figures):

8 inches/year

Permeability of Unsaturated Zone — SCORE = 3

Soil type in unsaturated zone:

Sandy (Ref. 15; Ref. 2: Sec. 3.4)

1 drum/50 gal.

Permeability associated with soil type:

$>10^{-3}$ cm/sec (Ref. 1: Table 2)

Physical State — SCORE = 3

Physical state of substances at time of disposal (or at present time for generated gases):

Liquid (Ref. 2: Sec. 5.1; Ref. 10: part 2, Div. II)

* * *

3 CONTAINMENT

Containment SCORE = 3

Method(s) of waste or leachate containment evaluated:

Solid wastes are placed in an on-site dumpster (Ref. 2: Sec. 5.3)

Wastewater goes through two silver recovery units and then is discharged into a drainfield (Ref. 2: Sec. 5.1).

Method with highest score:

Drainfield - evaluated as containers leaking and no liner or incompatible liner (Ref. 1: Table 3).

4 WASTE CHARACTERISTICS

SCORE = 18

Toxicity and Persistence

Compound(s) evaluated

Silver	-	18	(Ref. 7; Ref. 14; Ref. 2: part 2, Div III)
Benzyl Alcohol	-	9	(Ref. 9; Ref. 13: p. 2 & 3)
Hydroquinone	-	9	(Ref. 9; Ref. 13: p. 4)
Potassium Hydroxide	-	9	(Ref. 9; Ref. 13: pp. 5 & 6)
Formaldehyde	-	9	(Ref. 7; Ref. 13: p. 9)

Compound with highest score:

Silver	-	18	(Ref. 13; Ref. 10: part 2, Div. III) (Ref. 7)

Hazardous Waste Quantity SCORE = 8

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum)

17,024 drums

Basis of estimating and/or computing waste quantity:

Rinsewater

7/82 - 9/84: 100 gal/day (Ref. 11; Ref. 19) X 2 yrs X 5 day/wk X 52 wk/yr X 1 drum/50 gal = 1,040 drums

9/84 - 6/86: 1500 gal/day (Ref. 17; Ref. 18) X 2 yrs X 5 day/wk X 52 wk/yr X 1 drum/50 gal + 15,600 drums

Photoprocessing sludge

7/82 - 6/86: 10 drums/month (Ref. 16) X $\frac{12 \text{ months}}{\text{yr}}$ X 4 yrs (Ref. 11) = 384 drums

(384 + 15,600 + 1040) drums = 17,024 drums

5 TARGETS

SCORE = 3

Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

Drinking water (Ref. 5: pg. 187)
The Biscayne aquifer is a "sole-source aquifer" in southeast Florida (Ref. 3).

Distance to Nearest Well SCORE = 4

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

Municipal well #13 is located northwest of the site (Ref. 12).

Distance to above well or building:

1600 ft. (Ref. 12)

Population Served by Ground Water Wells Within a 3-Mile Radius SCORE = 5

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

The majority of Fort Lauderdale's municipal supply wells are located within 3 miles of the site (Ref. 8).

The population of Fort Lauderdale was 226,430 in 1975 (Ref. 5: pg. 187).

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

N/A - The site is located in a residential/commercial district (Ref. 4).

Total population served by ground water within a 3-mile radius:

< 200,000 (Ref. 5: pg. 187)

SCORE = 40
(Ref. 1)

Not Rated - The site is located within a closed basin (Ref. 4), thus intervening terrain precludes the migration of potential contaminants to surrounding surface water bodies.

SURFACE WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

Rationale for attributing the contaminants to the facility:

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

Name/description of nearest downslope surface water:

Average slope of terrain between facility and above-cited surface water body in percent:

Is the facility located either totally or partially in surface water?

Is the facility completely surrounded by areas of higher elevation?

1-Year 24-Hour Rainfall in Inches

Distance to Nearest Downslope Surface Water

Physical State of Waste

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Method with highest score:

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Compound with highest score:

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Basis of estimating and/or computing waste quantity:

* * *

5 TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

Is there tidal influence?

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies of 1 mile (static water bodies) downstream of the hazardous substances and population served by each intake:

AIR ROUTE
NOT RATED

1 OBSERVED RELEASE

Contaminants detected:

Date and location of detection of contaminants

Methods used to detect the contaminants:

Rationale for attributing the contaminants to the site:

* * *

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Most incompatible pair of compounds:

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

Total population served:

Name/description of nearest of above water bodies:

Distance to above-cited intakes, measured in stream miles:

Toxicity

Most toxic compound:

Hazardous Waste Quantity

Total quantity of hazardous waste:

Basis of estimating and/or computing waste quantity:

* * *

3 TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi. 0 to 1 mi. 0 to 1/2 mi. 0 to 1/4 mi.

Distance to a Sensitive Environments

Distance to 5-acre (minimum) coastal wetland, if 2 miles of less:

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance to critical habitat of an endangered species, if 1 mile or less:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

FIRE AND EXPLOSION

NOT RATED

Not Reported

1 CONTAINMENT

Hazardous substances present:

Type of containment, if applicable:

* * *

2 WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

Ignitability

Compound used:

Reactivity

Most reactive compound:

Incompatibility

Most incompatible pair of compounds:

* * *

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

Basis of estimating and/or computing waste quantity:

* * *

3 TARGETS

Distance to Nearest Population

Distance to Nearest Building

Distance to Sensitive Environment

Distance to wetlands:

Distance to critical habitat:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

Population Within 2-Mile Radius

Buildings Within 2-Mile Radius

DIRECT CONTACT
NOT RATED

1 OBSERVED INCIDENT

Date, location, and pertinent details of incident:

Not reported

* * *

2 ACCESSIBILITY

Describe type of barrier(s):

* * *

3 CONTAINMENT

Type of containment, if applicable:

* * *

4 WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

Compound with highest score:

* * *

5 TARGETS

Population within one-mile radius

Distance to critical habitat (of endangered species)

REFERENCES

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

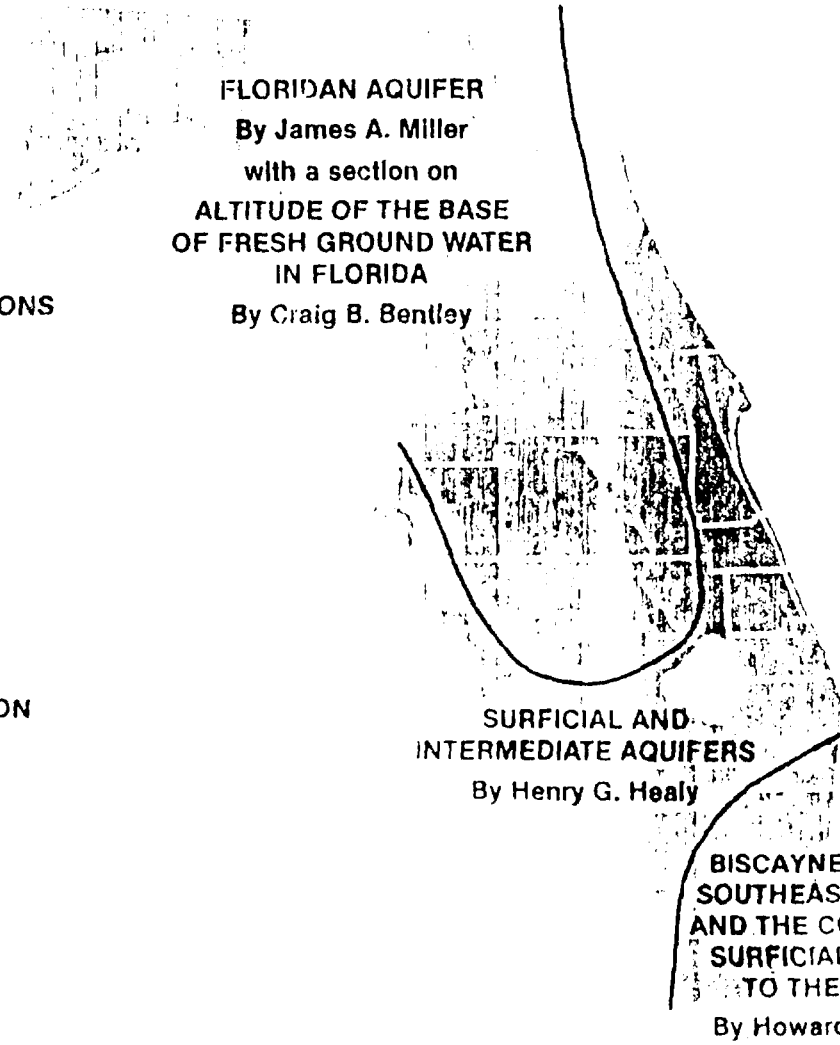
Kulakowski

PRINCIPAL AQUIFERS IN FLORIDA

Edited By Bernard J. Franks

SAND-AND-GRAVEL AQUIFER
By Mary Cushman-Rolain and Bernard J. Franks

FLORIDAN AQUIFER
By James A. Miller
with a section on
ALTITUDE OF THE BASE OF FRESH GROUND WATER IN FLORIDA
By Craig B. Bentley



SURFICIAL AND INTERMEDIATE AQUIFERS
By Henry G. Healy

BISCAYNE AQUIF
SOUTHEAST FLOI
AND THE CONTIGU
SURFICIAL AQUIF
TO THE NORTI
By Howard Klein
Carmen R. Causar

WATER-RESOURCES INVESTIGATIONS
OPEN-FILE REPORT 82-255

Prepared in cooperation with the

FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION

assee, Florida

By Howard Klein and Carmon R.

INTRODUCTION

Surficial aquifers are the major sources of drinking water in southeast Florida (fig. 11). The Biscayne aquifer, which supplies Dade and Broward Counties and southeast Palm Beach County, is the principal aquifer. A contiguous surficial aquifer (a possible northward extension of the Biscayne) supplies most of Palm Beach, Martin, and St. Lucie Counties.

The surficial aquifers, the interconnected primary canals with flow-regulation structures, the three water-conservation areas, and Lake Okeechobee constitute an integrated hydrologic system utilized for management of the water resources of southeast Florida by the South Florida Water Management District. Flood protection is furnished by discharging part of the surplus stormwater through the canals to the ocean. Part of the surplus is backpumped for storage in the water-conservation areas and is made available for urban and agricultural use during the dry season (December through May) by redistribution through the canal system. Part of the conserved water channeled to the coast is used to maintain coastal ground-water levels high enough to retard saltwater intrusion.

Because the Biscayne aquifer is highly permeable and vulnerable to contamination through its recharge zone, and because it is the sole source of drinking water for more than 3,000,000 people in southeast Florida, the U.S. Environmental Protection Agency has designated the Biscayne aquifer as a "sole source aquifer." This designation, provided for by the Safe Drinking Water Act of 1974 (Public Law 93-523), requires studies to determine that federally-financed projects will not contaminate designated aquifers.

HYDROGEOLOGY

The Biscayne aquifer, the major source of drinking water in Dade, Broward, and southeast Palm Beach Counties, is composed of limestone, sandstone, and sand (Parker, 1951, p. 820-82[illegible]). It is primarily limestone in south and west Dade County and becomes increasingly sandy to the north and east. The limestone is solution-riddled, resulting in high permeability (hydraulic conductivity). The increasing content of sand reduces the permeability within the aquifer. High-capacity municipal-supply wells are bottomed in thick limestone sections. Large-diameter public-supply wells produce as much as 7,000 gal/min in Dade County with comparatively small water-level drawdowns. The aquifer is more than 240 feet thick in coastal Broward and Palm Beach Counties, thinning westward until it wedges out 35 to 40 miles into the Everglades. It is composed chiefly of Miami Oolite, Fort Thompson Formation, Anastasia Formation, and a sandy limestone in the upper part of the Tamiami Formation (table 5). The Pleistocene formations are, in part, contemporaneous.

The surficial aquifer in Martin, St. Lucie, and Palm Beach Counties is composed chiefly of sand. In Martin and St. Lucie Counties, wells generally yield less than 1,000 gal/min; most wells, in fact, yield less than 500 gal/min. Relatively thin limestone and shell layers in the sand form highly permeable sections, but they yield less water than the limestone of the Biscayne aquifer. An important unit of the surficial aquifer in east Palm Beach County is an elongate, cavity-riddled sandstone of high permeability located parallel to and inland from the coast (Fischer, 1980, p. 12-22). Large diameter wells in this zone can produce more than 1,000 gal/min (Scott, 1977, p. 7). This zone may be a northward extension of the Biscayne aquifer.

Water-Table Configuration

The contours in figure 13 show the altitude of the water table in southeast Florida near the end of the 1977-78 dry season (May 1978). The water table is lowest at the coast, along tidal reaches of canals, and in the centers of large well-field areas, [illegible] highest adjacent to the water-conservation areas and in areas of higher land elevation in St. Lucie, Martin, and Palm Beach Counties. During dry seasons, ground-water flow is toward the drainage canals in the ingradient interior parts of the system, and from the canals into the aquifer in the downgradient coastal parts of the system. The isolated depressions near the large cities represent the drawdown of the water table caused by large-scale pumping for municipal supplies. The largest and deepest depressions are near Miami and Fort Lauderdale.

The wide spacing (low gradient) of the contours in Dade and Broward Counties indicates materials of relatively high permeability in the aquifer as contrasted with the close spacing (high gradient) in the northern counties where the permeability is much lower. The contours in north Palm Beach County and in parts of Martin County are widely spaced because the aquifer is fully saturated--the area is marshy, and the contours follow the virtually flat land surface.

STRUCTURE: TOP, BASE, AND THIC

The surficial aquifers in southeast Flor[illegible] near the coast and wedge out in the interior. [illegible] the top of the Biscayne aquifer and the con[illegible] aquifer to the north are identical to the eleva[illegible] surface, ranging from sea level to about 2[illegible] level near Lake Okeechobee.

The altitude of the base of the aquife[illegible] figure 13. Much of this map is modified from [illegible] Schroeder and others (1958, fig. 2) and by Hil[illegible] maximum depth, more than 240 feet below sea [illegible] Fort Lauderdale-Boca Raton area. The botto[illegible] in Dade County and south Broward County is [illegible] surface and is usually at the base of a gray li[illegible] of high permeability, which is underlain by [illegible] sand or silt of low permeability. Farther to [illegible] base of the aquifer is not as distinct; it is re[illegible] zone of transition from mixtures of sand, shel[illegible] silt of low or moderate permeability down to cl[illegible] of very low permeability.

The thickness of the aquifer at a selecte[illegible] estimated by subtracting the altitude of the bas[illegible] from the altitude of the land surface at [illegible] saturated thickness can be estimated, similarly, [illegible] the altitude of the base of the aquifer from the [illegible] water table shown in figure 12. The wedge i[illegible] ranges in thickness from more than 240 feet n[illegible] a few feet near its western limit.

WATER QUALITY

The water in the Biscayne and the coa[illegible] aquifer of southeast Florida is a hard, calciu[illegible] type, with variable amounts of iron. Selecte[illegible] data have been summarized in several rep[illegible] Parker and others (1955), Schroeder and [illegible] Tarver (1964), and Klein and Hull (1978). [illegible] selected water quality data for the Biscayne aqui[illegible] in table 2 (sheet 1) of this report.

Dissolved solids and chloride concentratine[illegible] low (about 300 milligrams per liter [mg/L], r[illegible] respectively), although in wells near the [illegible] mineralized water is present. The pH is [illegible] alkaline, and hardness is typically about [illegible] quality of water in the aquifer is generally [illegible] drinking water, except for locally high iron a[illegible] concentrations. Iron concentration is highly difficult to predict. High organic concentrat[illegible] high color content in the water, and is a treat[illegible] parts of north and central Dade and south Br[illegible]

Saltwater intrusion into the surficial aquifer Florida has been a problem, particularly in D[illegible] Counties, and will probably continue to be a [illegible] out the coastal area as water demands incr[illegible] others, 1972, p. 68). Intrusion first develop[illegible] area in the 1930's and 1940's as a result of ur[illegible] drainage which caused excessive decline of wat[illegible] response to lowered levels was a gradual inter[illegible] saltwater along the deep parts of the surficia[illegible] placement and operation of flow-regulation struc[illegible] and the water-management practices of the Sou[illegible] Management District have succeeded in pre[illegible] advances of saltwater in most areas.

The inland extent of water containing cer[illegible] 10,000 mg/L of dissolved solids or more, at [illegible] of the surficial aquifers at the end of the dry[illegible] (May 1978) is shown in figure 13. This map [illegible] modified from Meloy and Sherwood (1968, fig. 5[illegible] others (1972, fig. 13), Scott and others (1[illegible] 1979, fig. 58). Intrusion is most evident [illegible] aquifer in the vicinity of the uncontrolled ca[illegible] the Miami area, the Fort Lauderdale area, [illegible] glades of low elevation in south Dade County.

In contrast, saltwater intrusion is not al[illegible] significant problem in most of Palm Beach and [illegible] is indicated by the proximity to the coast of [illegible] the 1[illegible] in figure 13. This general lack of intru[illegible] the result of (1) maintenance of high water le[illegible] parts of the shallow aquifer by the manage[illegible] the 2) the lower permeability of the aquifer as co[illegible] of the Biscayne aquifer, and (3) relatively sma[illegible] for ground water in the northern counties. [illegible] freshwater increase in future years, strict w[illegible] practices will be required if saltwater intr[illegible] controlled.

HEAST FLORIDA, AND CONTIGUOUS SURFICIAL AQUIFER TO THE NORTH

By Howard Klein and Carmen R. Causaras

STRUCTURE: TOP, BASE, AND THICKNESS

The surficial aquifers in southeast Florida are thickest near the coast and wedge out in the interior. The altitudes of the top of the Biscayne aquifer and the contiguous surficial aquifer to the north are identical to the elevation of the land surface, ranging from sea level to about 20 feet above sea level near Lake Okeechobee.

The altitude of the base of the aquifers is shown in figure 13. Much of this map is modified from earlier work by Schroeder and others (1958, fig. 2) and by Miller (1980). The maximum depth, more than 240 feet below sea level, is in the Fort Lauderdale-Boca Raton area. The bottom of the aquifer in Dade County and south Broward County is a fairly distinct surface and is usually at the base of a gray nodular sandstone of high permeability, which is underlain by fine to medium sand or silt of low permeability. Farther to the north, the base of the aquifer is not as distinct; it is represented by a zone of transition from mixtures of sand, shelly material, and silt of low or moderate permeability down to clay and silty clay of very low permeability.

The thickness of the aquifer at a selected site can be estimated by subtracting the altitude of the base of the aquifer from the altitude of the land surface at that site. The saturated thickness can be estimated, similarly, by subtracting the altitude of the base of the aquifer from the altitude of the water table shown in figure 12. The wedge-shaped aquifer ranges in thickness from more than 240 feet near the coast to a few feet near its western limit.

WATER QUALITY

The water in the Biscayne and the contiguous surficial aquifer of southeast Florida is a hard, calcium bicarbonate type, with variable amounts of iron. Selected water quality data have been summarized in several reports, including Parker and others (1955), Schroeder and others (1958), Tarver (1964), and Klein and Hull (1978). A summary of selected water quality data for the Biscayne aquifer is included in table 2 (sheet 1) of this report.

Dissolved solids and chloride concentrations are usually low (about 300 milligrams per liter [mg/L] and 30 mg/L, respectively), although in wells near the coast highly mineralized water is present. The pH is usually slightly alkaline, and hardness is typically about 300 mg/L. The quality of water in the aquifer is generally acceptable for drinking water, except for locally high iron and high organic concentrations. Iron concentration is highly variable and difficult to predict. High organic concentration is related to high color content in the water, and is a treatment problem in parts of north and central Dade and south Broward Counties.

Saltwater intrusion into the surficial aquifers in southeast Florida has been a problem, particularly in Dade and Broward Counties, and will probably continue to be a problem throughout the coastal area as water demands increase (Leach and others, 1972, p. 68). Intrusion first developed in the Miami area in the 1930's and 1940's as a result of uncontrolled canal drainage which caused excessive decline of water levels. The response to lowered levels was a gradual inland migration of saltwater along the deep parts of the surficial aquifers. The placement and operation of flow-regulation structures in canals and the water-management practices of the South Florida Water Management District have succeeded in preventing further advances of saltwater in most areas.

The inland extent of water containing concentrations of 10,000 mg/L of dissolved solids, or more, at or near the base of the surficial aquifers at the end of the 1978-79 dry season (May 1979) is shown in figure 13. This map is adapted and modified from McCoy and Sherwood (1968, fig. 8), Leach and others (1972, fig. 13), Scott and others (1977), and Hull (1979, fig. 58). Intrusion is most evident in the Biscayne aquifer in the vicinity of the uncontrolled reaches of canals in the Miami area, the Fort Lauderdale area, and the coastal glades of low elevation in south Dade County.

In contrast, saltwater intrusion is not now (1981) a significant problem east of Palm Beach and Martin Counties, as indicated by the proximity to the coast of the 10,000 mg/L line in figure 13. The general lack of intrusion probably is the result of: 1) maintenance of high water levels in coastal parts of the shallow aquifer by the management agencies; 2) the lower permeability of the aquifer as compared with that of the Biscayne aquifer; and 3) relatively small withdrawals of ground water. As the northern counties demands for freshwater increase in future years, strict water-management practices will be required if saltwater intrusion is to be controlled.

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ABBREVIATIONS AND CONVERSION FACTORS

Factors for converting inch-pound units to Interna System (SI) and abbreviations of units

Multiply inch-pound units	By	To obtain metric (SI)
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
gallon per minute (gal/min)	0.06309	liter per second (L/s)

National Geodetic Vertical Datum of 1929 (NGVD of 1929 geodetic datum derived from a general adjustment of the order level nets [illegible] with the United States and Ca formerly called "mean sea level." NGVD of 1929 is refer as "sea level" in the rest of this report.

OVERSIZED

DOCUMENT

PUBLIC WATER SUPPLIES OF SELECTED MUNICIPALITIES IN FLORIDA, 1975

By Henry G. Healy

U.S. GEOLOGICAL SURVEY

WATER-RESOURCES INVESTIGATIONS 77-53

Prepared in cooperation with

FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
ST JOHNS RIVER WATER MANAGEMENT DISTRICT
SUWANNEE RIVER WATER MANAGEMENT DISTRICT
NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
AND OTHER STATE, LOCAL, AND FEDERAL AGENCIES

July 1977

FORT LAUDERDALE

County: Broward **Population served:** 226,430
River basin: Everglades and southeastern coastal area (09 02 02)

Ownership of supply or system: Municipal
Source of water: Ground water, Biscayne aquifer; 59 wells, 75 to 189 feet deep; yield 400 to 2,100 gal/min

Rated plant capacity: 60 Mgal/d
Pumpage: **Year**— 16,798.39 Mgal **Average daily**— 46.02[a/] Mgal
Mgal **Highest month:** April, 1,822.2 Mgal **Lowest month:** October, 1,172.3 Mgal

Per capita use: 203 gal/d
Finished-water storage: 20 Mgal
Treatment: Aeration, chlorination, coagulation, filtration, flocculation, pH control, softening, taste and odor control

Type/Frequency of analysis: Bacteriological, chemical, color, and turbidity/ daily; spectrographic/30 times yearly
Sewage discharge: 16.97 Mgal/d (5 sewage treatment plants)
Sewage treatment: Chlorination, clarification, comminution (all); activated sludge, drying, grit chamber, skimming (2); aeration, digestion (3); contact stabilization, incineration (1)
Waste discharged to: North Fork New River Canal; Intracoastal Waterway (2); South Fork New River; North Fork Middle River
Remarks: Average daily pumpage increased from 17.10 Mgal/d in 1956 to 46.0 Mgal/d in 1975. City supplied at total of 6.576 mgd to Wilton Manors, Oakland Pk, Lazy Lake and Tamarac. City also supplies Lauderdale-by-the-sea, Sea Ranch Lake, Ft. Lauderdale-Hollywood airport and Port Everglades. Supplementary supply for Dania, Plantation and Broward County Utilities Dept. (fig 24). Leach and others (1972), Sherwood and others (1973). a/ Combined pumpage, Dixie and Prospect Well Fields.

CHEMICAL ANALYSIS (milligrams per liter except as indicated)

ANALYSIS BY: U.S. Geological Survey **COLLECTION DATE:** 6-12-75
SAMPLING POINT: 261044080092001, Prospect water plant

Silica (SiO_2)	9.7	Dissolved solids (residue at 180°C)	388
Calcium (Ca)	100	Total hardness (as $CaCO_3$)	260
Magnesium (Mg)	2.8	Noncarbonate hardness (as $CaCO_3$)	15
Sodium (Na)	19	Alkalinity (as $CaCO_3$)	245
Potassium (K)	1.5	pH (units)	7.4
Strontium (Sr)	.78	Specific conductance (μmhos/cm at 25°C)	619
Bicarbonate (HCO_3)	299	Color (Pt-Co units)	45
Sulfate (SO_4)	26	Temperature (°C)	--
Chloride (Cl)	33	Turbidity (JTU)	--
Fluoride (F)	.3	Carbon, organic, total (C)	--
Nitrate (NO_3-N)	.01	Orthophosphate total (PO_4-P)	--
Nitrite (NO_2-N)	.00		
Nitrogen, organic (N)	--		
Nitrogen (ammonia, total (NH_4-N))	.63		
Iron (Fe)	1.8		
Phosphorus, total (P)	--		

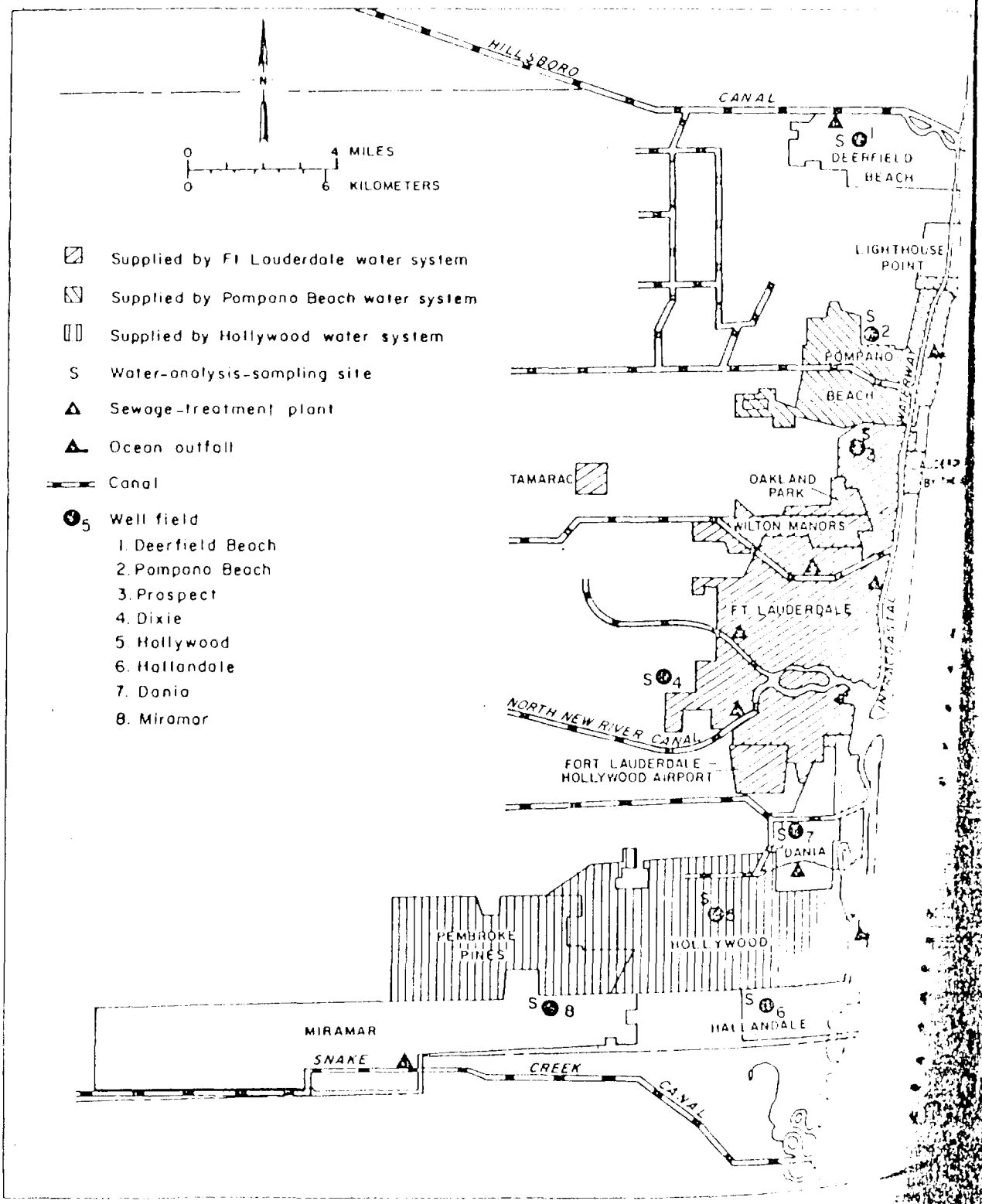


Figure 24.--Areas supplied water by individual and compos
Broward County.

County: Lee
River basin: Cal
Ownership of supp
Source of water:
percent of su
surface water,
Rated plant capac
Pumpage: Year-
Highest month
Per capita use:
Finished-water st
Treatment: Chl
recarbonation,
Type/Frequency o
turbidity/mont
Sewage discharge:
Sewage treatment:
South Plant
Waste discharged
Remarks: Avera
In 1975. Serv
Broul and oth
Includes 2.
aquifer at the
CHEMICAL ANAL
ANALYSIS BY:
SAMPLING POIN
(SiO2)
(Ca)
(Mg)
(Na)
(K)
(Sr)
(HCO
(SO4)
(Cl)
(F)
(NO3-N)
(NO2-N)
organi
tota
tota

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HYDROLOGIC ALMANAC OF FLORIDA

By Richard C. Heath and Clyde S. Conover

Open-File Report 81-1107

Prepared in cooperation with the

FLORIDA DEPARTMENT OF
ENVIRONMENTAL REGULATION
and other
STATE, LOCAL, AND FEDERAL AGENCIES

Tallahassee, Florida

1981

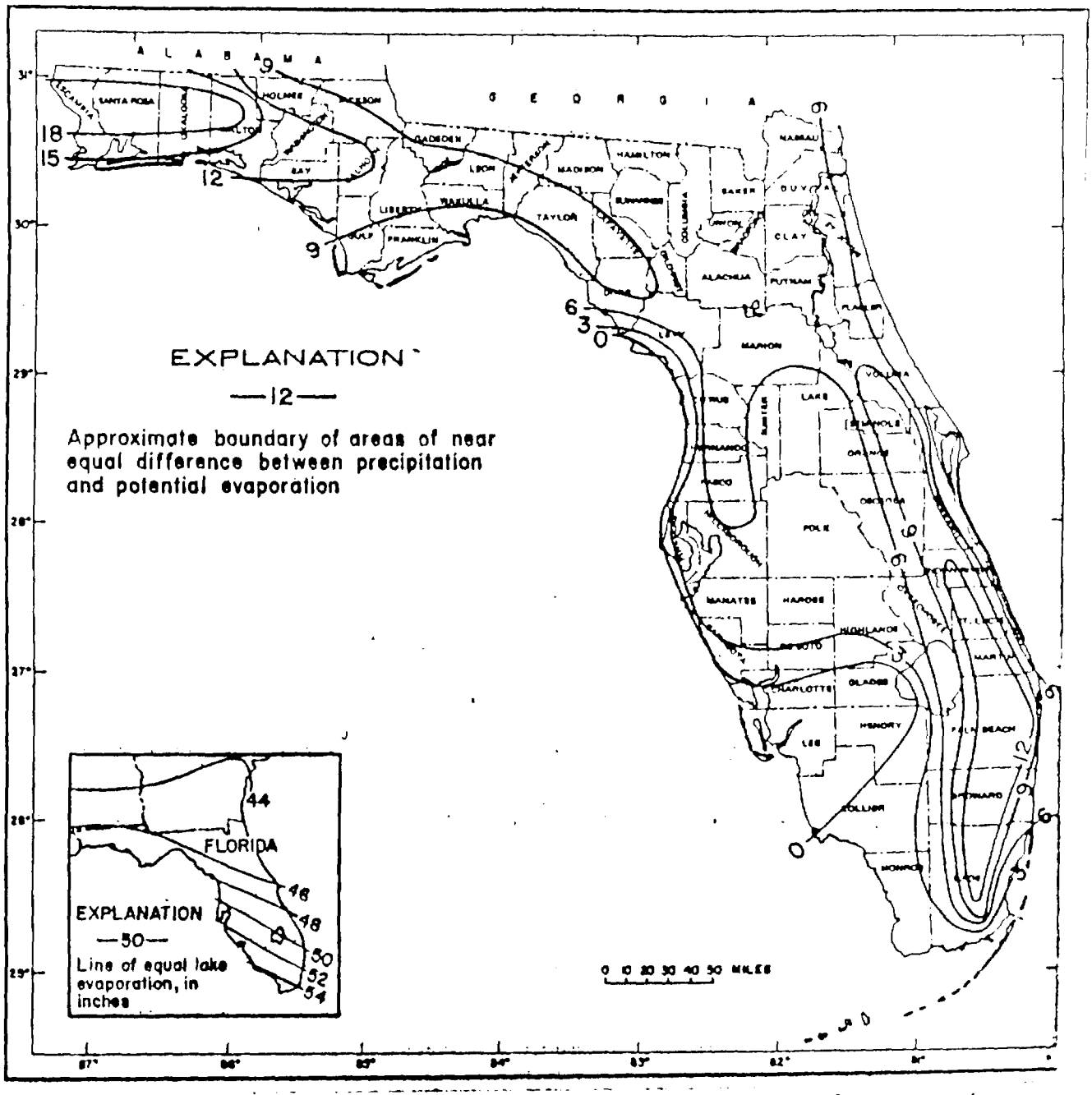


Figure 13.—The difference between rainfall and potential evaporation in Florida (modified from Visher and Hughes, 1969).

Table 8.--Rainfall data for selected long-term climatological stations in Florida listed alphabetically by county

[Modified from National Oceanic and Atmospheric Administration, 1978a]

County and station	Maximum rainfall (inches)				Normal or average rainfall (inches)[1]												Reference years of record and ending year	
	Month	Date	Day	Date	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Year	
Alachua, Gainesville 3 WSW	20.19	6/92	9.93	10/--/41	2.84	3.70	4.26	3.02	3.56	6.81	8.03	8.25	5.67	3.67	1.92	2.88	54.59	(25) 1978
Baker, Glen St. Mary 1 W	--	--	--	--	3.17	4.04	4.37	2.94	4.13	6.60	8.82	7.97	7.14	3.79	2.31	3.47	58.75	(83) 1978
Bay, Panama City 2	--	--	10.50	8/--/32	3.56	4.08	5.32	4.65	3.02	4.46	8.21	7.90	6.67	2.70	3.30	4.14	58.01	(64) 1960
Bradford, Starke	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(21) 1978
Brevard, Melbourne	--	--	--	--	2.20	2.81	3.68	2.36	3.57	6.54	6.05	5.63	8.19	5.55	2.60	1.61	50.79	(41) 1978
Brevard, Ft. Lauderdale	--	--	10.85	10/--/47	2.27	2.30	2.46	3.44	5.51	8.17	5.92	6.91	8.61	8.93	2.93	2.63	60.08	(65) 1978
Calhoun, Blountstown	--	--	--	--	4.15	4.09	5.10	4.70	4.53	5.56	7.96	6.54	5.76	3.02	3.02	3.87	58.67	(66) 1978
Charlotte, Punta Gorda 4 ESE	--	--	9.00	9/--/62	1.91	2.30	2.79	2.37	3.64	9.12	7.39	7.20	8.02	4.06	1.34	1.65	51.79	(14) 1978
Citrus, Inverness	--	--	--	--	2.64	3.39	4.30	2.50	3.48	7.07	9.53	9.81	6.40	3.23	1.54	2.40	56.29	(79) 1978
Clay, Camp Blanding	--	--	--	--	2.16	2.38	3.37	3.30	3.05	5.78	7.90	6.87	6.38	4.99	1.79	2.50	50.47	(16) 1957
Collier, Everglades	23.47	6/69	10.09	6/30/66	1.67	1.79	1.96	2.43	4.66	9.49	8.60	6.79	9.60	6.76	1.42	1.23	54.40	(52) 1978
Columbia, Lake City 2 E	15.31	6/65	7.01	9/29/63	3.45	3.87	4.06	3.27	3.84	6.48	7.37	6.85	5.88	3.52	2.29	3.26	54.14	(95) 1978
Dade, Miami WSMO AP	24.40	9/60	9.95	10/--/48	2.15	1.95	2.07	3.60	6.12	9.00	6.91	6.72	8.74	8.18	2.72	1.64	59.80	(40) 1978
De Soto, Arcadia	--	--	--	--	2.26	2.55	2.95	2.51	4.10	9.07	8.84	7.29	7.57	4.07	1.84	1.98	55.43	(78) 1978
Dixie, Cross City 2 WNW	18.76	7/41	7.04	7/--/41	2.95	3.77	4.48	2.85	3.67	7.04	10.38	7.88	6.81	2.99	2.25	2.84	57.91	(19) 1978
Duval, Jacksonville WSO AP	19.36	9/49	10.17	9/--/50	2.78	3.58	3.56	3.07	3.22	6.27	7.35	7.89	7.83	6.54	1.79	2.59	54.47	(42) 1978
Escambia, Pensacola FAA Ap	16.03	7/75	10.02	9/--/67	4.37	4.69	6.31	4.99	4.25	6.30	7.33	6.67	8.15	3.13	3.37	4.66	64.22	(74) 1978
Flagler, Marineland	--	--	--	--	1.69	3.01	4.47	2.05	2.26	3.46	4.77	5.67	8.75	6.32	2.34	2.10	46.89	(9) 1960
Franklin, Apalachicola WSO AP	22.55	9/44	11.71	9/--/32	3.07	3.78	4.70	3.61	2.78	5.30	8.02	8.07	9.00	2.88	2.68	3.32	57.21	(76) 1978
Gadsden, Quincy 3 SSW	--	--	--	--	3.90	4.46	5.61	4.62	3.98	5.38	7.74	5.62	5.74	2.75	2.62	4.30	56.72	(11) 1978
Gilchrist,	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Glades, Moore Haven Lock 1	18.56	7/74	6.00	6/12/55	1.76	2.06	2.88	2.67	4.63	8.05	7.16	6.57	7.49	4.48	1.14	1.53	50.22	(60) 1978
Gulf, Wewahitchka	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(23) 1978
Hamilton, Jasper 3 SE	--	--	--	--	2.89	4.51	4.93	4.41	3.59	5.61	7.00	5.03	6.40	3.01	2.23	2.37	51.98	(10) 1960
Hardee, Wauchula 2 N	--	--	--	--	2.28	2.79	3.39	2.85	3.99	8.66	9.04	7.48	7.88	3.05	1.63	1.70	54.66	(46) 1978
Hendry, La Belle	--	--	--	--	1.76	2.23	3.25	2.56	4.52	9.65	8.52	7.70	7.49	4.20	1.25	1.51	54.62	(48) 1978
Hernando, Brooksville Chin Hill	17.70	3/60	8.58	7/29/60	2.69	3.37	4.44	2.70	3.50	7.65	9.02	9.60	7.29	3.09	1.76	2.53	57.64	(86) 1978
Highlands, Avon Park 2 W	18.95	6/54	6.32	11/25/53	2.14	2.77	3.36	3.08	3.93	9.13	8.75	7.25	7.72	3.87	1.64	1.70	55.34	(81) 1978
Hillsborough, Tampa WSMO R	20.59	7/60	12.11	7/--/60	2.33	2.86	3.89	2.10	2.41	6.49	8.43	8.00	6.35	2.54	1.79	2.19	49.38	(89) 1978
Holmes, Bonifay	--	--	--	--	4.82	4.91	4.20	4.92	3.76	5.05	7.69	5.14	4.72	2.96	3.33	4.65	56.15	(25) 1931
Indian River, Fellsmere 7 SSW	--	--	--	--	2.08	2.29	3.54	2.63	3.86	7.41	6.79	7.99	8.66	6.85	2.07	1.71	55.88	(66) 1978
Jackson, Marianna Jod School	--	--	--	--	3.78	4.36	5.70	5.02	4.30	4.82	7.67	6.47	4.81	2.08	3.27	4.07	56.33	(70) 1960
Jefferson, Monticello 3 W	23.35	9/57	7.41	9/16/57	3.76	4.26	5.60	4.23	3.62	5.89	7.42	5.32	5.63	2.70	2.42	3.71	54.56	(75) 1978
Lafayette, Hay 5 NW	--	--	--	--	2.39	3.51	4.62	4.69	3.92	6.36	8.33	6.11	6.43	4.30	2.42	2.34	55.42	(11) 1960
Lake, Clermont 6 SSW	16.23	8/67	5.62	10/16/56	2.34	2.93	3.89	2.95	2.91	7.00	8.62	7.24	6.56	3.16	1.66	2.34	51.40	(86) 1978
Lee, Fort Myers WSO AP	20.10	6/74	10.85	10/--/51	1.64	2.03	3.06	2.03	3.99	8.89	8.90	7.72	8.71	4.37	1.31	1.30	53.95	(87) 1978
Leon, Tallahassee WSO AP	20.12	7/64	9.47	9/--/69	3.74	4.77	5.93	4.07	4.04	6.62	8.92	6.89	6.64	2.93	2.81	4.22	61.58	(94) 1978
Levy, Cedar Key	--	--	--	--	2.47	2.81	3.62	2.95	2.02	4.19	8.08	7.40	6.38	3.07	1.38	2.19	46.56	(82) 1960
Liberty, Bristol	--	--	--	--	2.77	4.18	4.62	5.48	5.01	5.82	5.96	6.80	5.46	3.72	2.84	3.46	54.30	(10) 1960
Madison, Madison 4 N	20.44	9/57	8.90	3/31/62	3.43	3.94	5.36	3.88	3.36	5.61	7.19	6.03	5.48	2.61	2.39	3.37	52.63	(78) 1978
Manatee, Bradenton 5 ESE	25.62	6/12	10.80	6/--/65	2.68	2.87	3.65	2.43	2.60	7.63	8.96	9.55	8.68	3.24	1.91	.17	56.35	(14) 1978
Marion, Ocala	16.26	9/50	8.00	9/--/50	2.38	3.01	3.55	3.04	3.98	7.30	8.40	7.82	6.77	3.27	1.75	.68	53.95	(65) 1960
Martin, Stuart 1 N	--	--	6.50	4/--/37	2.43	2.52	3.46	2.83	4.48	7.16	6.55	6.19	8.46	7.48	2.17	2.26	55.99	(43) 1978
Monroe, Tavernier	21.83	6/67	8.51	10/30/62	2.00	1.92	1.87	2.28	4.37	6.61	4.75	4.88	7.45	8.35	2.36	2.05	48.89	(42) 1978
Nassau, Fernandina Beach	23.80	11/69	22.02	11/01/69	2.65	3.35	3.82	2.68	3.[illegible]	5.27	6.65	6.99	8.09	4.71	2.59	2.67	52.88	(82) 1978
Okaloosa, Niceville	--	--	--	--	4.35	4.47	5.61	4.91	.2	6.18	8.35	7.52	7.48	3.17	3.48	4.90	64.14	(52) 1978
Okeechobee, Okeechobee Rice Gate 6	--	--	--	--	1.80	2.10	[illegible].93	2.71	5.70	7.61	5.89	6.26	6.84	4.88	1.[illegible]	1.47	47.44	(56) 1978
Orange, Orlando WSO McCoy	19.57	7/60	9.67	9/--/45	2.20	2.95	3.46	2.72	2.94	7.11	8.29	6.73	7.20	4.07	1.[illegible]	1.90	51.21	(5) 1978
Osceola, Kissimmee 2	17.33	6/45	9.50	10/--/99	1.91	2.44	4.03	3.34	3.61	7.75	6.03	6.83	7.25	3.97	1.[illegible]4	1.90	52.80	(70) 1960
Palm Beach, Belle Glade Exp Sta	19.50	9/60	6.29	10/02/51	1.99	1.97	3.21	2.96	3.74	9.08	8.58	8.21	8.82	5.65	1.74	1.80	58.75	(54) 1978
Pasco, Saint Leo	19.08	6/74	9.17	4/13/53	2.55	3.13	4.53	3.10	3.79	8.02	8.68	8.55	7.08	2.93	1.87	2.36	56.59	(86) 1978
Pinellas, Tarpon Spgs Sewage Pl	20.76	7/60	8.70	7/29/60	2.69	2.82	4.36	2.68	2.52	5.58	9.10	9.32	7.37	2.78	1.91	2.54	53.67	(88) 1978
Polk, Lakeland 3 SE	15.67	7/60	10.12	6/--/45	2.32	2.52	4.02	2.57	3.44	6.70	8.09	7.18	6.06	2.84	1.60	.09	49.43	(63) 1978
Putnam, Palatka	--	--	8.56	10/--/51	2.56	3.42	4.05	3.00	3.32	6.49	7.74	7.56	7.58	4.88	1.85	1.41	56.84	(53) 1978
St. Johns, St. Augustine	21.80	9/63	9.52	9/18/63	2.35	3.06	4.05	3.25	2.85	5.35	6.21	5.88	7.77	6.56	2.48	2.57	52.38	(92) 1960
St. Lucie, Fort Pierce	19.90	9/63	6.62	9/24/63	2.10	2.77	3.50	3.33	4.15	6.11	5.53	6.35	8.69	7.87	2.36	2.24	56.91	(78) 1978
Santa Rosa, Milton Exp Sta	--	--	--	--	3.85	4.16	5.81	6.43	3.81	6.99	8.52	6.81	8.40	3.02	3.57	5.30	64.77	(12) 1960
Sarasota, Sarasota	--	--	--	--	2.24	2.65	3.53	3.57	2.84	5.11	6.03	8.60	9.96	3.92	2.17	2.51	55.13	(13) 1960
Seminole, Sanford Exp Sta	--	--	--	--	2.31	2.84	3.90	2.69	2.83	7.19	8.35	6.99	7.76	4.56	1.75	2.15	53.32	(23) 1978
Sumter, Bushnell 2 E	16.85	6/74	6.90	6/25/74	2.46	3.22	4.34	3.13	3.64	6.97	8.97	7.43	6.65	3.25	1.51	2.18	53.74	(42) 1978
Suwannee, Live Oak 2 ESE	--	--	--	--	3.01	3.38	4.64	4.62	3.60	7.11	9.17	6.81	5.81	3.30	1.89	2.15	53.49	(8) 1960
Taylor, Perry[2]	--	--	--	--	2.85	3.56	4.20	2.86	3.74	6.46	9.55	7.43	6.66	2.46	3.65	2.20	55.32	(9) 1938
Union, Raiford St Prison	--	--	--	--	2.68	3.40	3.39	3.06	3.84	6.38	7.64	6.82	5.39	3.41	1.63	3.21	50.85	(58) 1956
Volusia, Daytona Bch WSO AP[3]	19.89	8/53	9.29	10/--/53	2.05	2.92	3.37	2.39	2.65	6.60	6.69	6.84	7.10	5.52	2.13	1.96	50.22	(65) 1978
Wakulla, St. Marks 5 ESE	28.55	9/57	8.36	4/28/64	3.57	4.03	4.86	3.78	3.33	6.15	7.87	6.22	6.61	2.87	2.58	3.65	55.12	(51) 1978
Walton, DeFuniak Springs	16.14	12/53	7.01	10/30/67	6.70	4.72	6.81	5.01	4.37	6.36	8.82	7.66	6.78	3.21	3.52	6.97	66.92	(80) 1978
Washington, Chipley 3 E	16.43	12/53	7.35	4/02/60	4.22	4.32	5.94	4.59	3.97	5.07	6.51	5.75	5.14	2.68	3.12	4.52	55.83	(40 1978

[1] Normal rainfall.--Climatological normals are usually based on 30 years of record for periods 1931 through 1960, or 1941 through 1970, or earlier period. Normals are not available for a few stations with 30 or more years of record through 1970 (as indicated by number of years of record through 1978).

Average rainfall.--Long-term means (averages) are used in place of normals for varied periods of record of less than 30 years. Averages have been computed only through 1960 for some selected stations (as noted by ending year), even though stations may be currently in operation.

[2] U.S. Department of Agriculture, 1941.

Table 15.--Public supply water use in Florida by counties, 1975

(Modified from Leach, 1978b)

County	Population (thousands)			Population served (thousands)			Water withdrawn (Mgal/d)			Water delivered (Mgal/d) by uses					
	Total	Municipal	Rural	Ground water	Surface water	All water	Ground water	Surface water	Total	Per capita (gal/d)	Public supply	Agriculture	Industry	Commercial	Air cooling	Water consumed (Mgal/d)
Alachua	130.8	86.3	44.5	90.7	0.0	90.7	14.90	0.0	14.90	164	14.90	0.0	0.0	0.0	0.0	5.82
Baker	12.3	4.0	8.3	4.1	0.0	4.1	0.54	0.0	0.54	132	0.46	0.0	0.0	0.08	0.0	0.49
Bay	91.6	65.3	26.3	17.7	65.0	82.7	1.95	32.59	34.54	418	7.84	0.0	25.56	1.14	0.0	12.49
Bradford	16.3	8.7	7.6	8.3	0.0	8.3	0.83	0.0	0.83	100	0.67	0.0	0.0	0.16	0.0	0.0
Brevard	252.0	157.1	94.9	134.9	90.0	224.9	[1]18.22	8.90	[2]27.12	121	27.12	0.0	0.0	0.0	0.0	9.85
Broward	876.3	730.8	145.5	812.0	0.0	812.0	139.78	0.0	139.78	172	102.66	20.71	5.12	8.70	2.58	80.91
Calhoun	8.3	3.0	5.3	3.0	0.0	3.0	0.28	0.0	0.28	93	0.21	0.0	0.0	0.07	0.0	0.05
Charlotte	42.2	6.1	36.1	1.7	90.3	92.0	0.18	5.90	6.08	128	3.63	0.0	0.0	0.45	0.0	2.35
Citrus	35.3	5.7	29.6	5.5	0.0	5.5	0.59	0.0	0.59	107	0.40	0.0	0.0	0.19	0.0	0.14
Clay	41.7	16.7	33.0	29.7	0.0	29.7	5.01	0.0	5.01	169	4.65	0.0	0.06	0.22	0.08	0.81
Collier	62.7	17.7	45.0	52.4	0.0	52.4	11.93	0.0	11.93	228	9.35	2.28	0.10	0.10	0.10	7.43
Columbia	28.8	11.5	17.3	15.9	0.0	15.9	1.70	0.0	1.70	107	1.04	0.0	0.17	0.41	0.08	0.67
Dade	[3]1,698.0	803.5	894.5	1,546.4	0.0	1,546.4	[4]264.55	0.0	[5]264.55	171	221.28	0.0	12.44	20.96	9.87	155.88
DeSoto	18.2	6.1	12.1	7.0	0.0	7.0	0.76	0.0	0.76	109	0.68	0.0	0.05	0.03	0.0	0.38
Dixie	6.6	2.5	4.1	3.8	0.0	3.8	0.42	0.0	0.42	111	0.40	0.0	0.0	0.02	0.0	0.07
Duval	528.3	528.3	0.0	523.7	0.0	523.7	95.42	0.0	95.42	182	69.66	0.0	7.54	13.20	5.22	29.90
Escambia	274.9	67.2	157.7	192.1	0.0	192.1	27.80	0.0	27.80	145	19.43	0.06	0.0	8.31	0.0	5.51
Flagler	8.6	3.5	5.1	6.0	0.0	6.0	0.62	0.0	0.62	103	0.62	0.0	0.0	0.0	0.0	0.26
Franklin	7.9	4.3	3.6	6.7	0.0	6.7	0.99	0.0	0.99	148	0.72	0.0	0.06	0.22	0.0	0.69
Gadsden	39.1	18.6	20.5	8.5	10.9	19.4	0.96	1.18	2.14	110	1.97	0.0	0.0	0.17	0.0	1.09
Gilchrist	5.1	1.7	3.4	1.5	0.0	1.5	0.38	0.0	0.38	253	0.38	0.0	0.0	0.0	0.0	0.09
Glades	5.1	1.2	3.9	1.2	0.0	1.2	0.20	0.0	0.20	167	0.18	0.0	0.0	0.02	0.0	0.04
Gulf	10.9	6.7	4.2	1.9	4.7	6.6	0.11	0.64	0.75	114	0.47	0.0	0.26	0.01	0.0	0.15
Hamilton	8.6	3.8	4.8	5.9	0.0	5.9	0.60	0.0	0.60	102	0.53	0.0	0.02	0.05	0.0	0.13
Hardee	18.5	7.0	11.5	6.9	0.0	6.9	1.20	0.0	1.20	174	1.20	0.0	0.0	0.0	0.0	0.20
Hendry	15.9	7.3	8.6	3.2	6.9	10.1	0.25	1.80	2.05	203	1.42	0.0	0.63	0.0	0.0	1.83
Hernando	28.5	4.8	23.7	5.0	0.0	5.0	0.75	0.0	0.75	150	0.75	0.0	0.0	0.0	0.0	0.19
Highlands	42.8	17.1	25.7	24.6	0.0	24.6	4.26	0.0	4.26	173	3.84	0.0	0.05	0.36	0.0	2.50
Hillsborough	605.6	318.6	287.0	53.6	350.0	403.6	[6]7.17	52.70	[7]59.87	148	55.14	0.0	3.61	0.80	0.32	8.55
Holmes	12.5	5.4	9.1	4.0	0.0	4.0	0.20	0.0	0.20	50	0.14	0.0	0.03	0.03	0.0	0.14
Indian River	46.5	18.1	28.2	18.6	0.0	18.6	6.49	0.0	6.49	241	3.81	0.0	0.28	0.60	0.0	1.79
Jackson	41.1	16.3	24.9	16.8	0.0	16.8	1.77	0.01	1.78	106	1.30	0.0	0.26	0.31	0.01	0.75
Jefferson	9.6	2.5	6.9	3.8	0.0	3.8	0.44	0.0	0.44	147	0.38	0.02	0.0	0.04	0.0	0.14
Lafayette	3.1	0.8	2.3	1.0	0.0	1.0	0.14	0.0	0.14	140	0.08	0.0	0.0	0.03	0.03	0.03
Lake	88.7	43.8	46.9	50.5	0.0	50.5	9.85	0.0	9.85	195	7.09	0.0	0.36	2.39	0.0	4.00
Lee	156.5	58.2	98.3	112.8	35.0	147.8	9.97	6.85	16.82	114	14.60	0.0	1.08	1.14	0.0	3.44
Leon	133.2	86.4	46.8	101.2	0.4	101.6	15.83	0.0	15.83	156	12.96	0.0	0.0	2.87	0.0	3.89
Levy	15.6	7.6	8.0	7.0	0.0	7.0	0.98	0.0	0.98	140	0.98	0.0	0.0	0.0	0.0	0.23
Liberty	3.9	0.7	3.2	1.5	0.0	1.5	0.09	0.0	0.09	60	0.07	0.01	0.0	0.01	0.0	0.02
Madison	14.4	5.4	9.0	7.0	0.0	7.0	1.09	0.0	1.09	156	0.74	0.0	0.30	0.05	0.0	0.67
Manatee	123.3	45.0	78.5	0.0	80.0	80.0	0.0	18.91	18.91	236	12.91	0.0	6.00	0.0	0.0	11.92
Marion	93.5	5.9	87.6	37.6	0.0	37.6	6.23	0.0	6.23	166	6.11	0.0	0.09	0.02	0.0	2.99
Martin	47.7	10.8	36.9	23.8	0.0	23.8	5.72	0.0	5.72	240	5.42	0.0	0.15	0.15	0.0	2.60
Monroe	55.7	30.3	25.4	43.5	12.2	55.7	[8]7.67	0.0	7.67	138	6.60	0.0	0.0	0.77	0.31	7.67
Nassau	39.1	10.3	18.8	5.8	0.0	5.8	2.40	0.0	2.40	414	1.24	0.18	0.70	0.27	0.0	0.61
Okaloosa	102.0	48.9	53.1	79.8	0.0	79.8	9.31	0.0	9.31	117	8.53	0.12	0.0	0.66	0.0	4.16
Okeechobee	17.0	4.2	12.8	0.0	8.2	8.2	0.0	1.04	1.04	127	0.94	0.0	0.0	0.10	0.0	0.42
Orange	426.6	176.6	250.0	339.1	0.0	339.1	[9]63.35	0.0	[10]63.35	187	58.97	0.0	2.19	2.19	0.0	30.07
Osceola	36.7	18.2	18.5	19.0	0.0	19.0	3.65	0.0	3.65	192	3.30	0.0	0.16	0.0	0.0	0.79
Palm Beach	677.8	337.8	140.0	282.2	109.7	391.9	62.98	31.43	94.41	241	74.93	0.0	6.61	6.75	6.14	43.51
Pasco	130.2	20.6	109.6	26.3	0.0	26.3	[11]2.96	0.0	[11]2.96	113	2.85	0.0	0.0	0.10	0.0	1.13
Pinellas	666.6	500.6	166.2	604.6	0.0	604.6	[12]76.97	0.0	[12]76.97	127	62.98	0.22	3.19	4.00	6.58	48.64
Polk	276.0	125.9	150.1	103.0	0.0	103.0	31.23	0.0	31.23	171	28.62	1.02	0.62	0.97	0.0	18.71
Putnam	43.5	13.6	29.9	14.9	0.0	14.9	2.58	0.0	2.58	173	2.58	0.0	0.0	0.0	0.0	0.87
St. Johns	40.2	14.3	25.9	21.2	0.0	21.2	2.67	0.0	2.67	126	2.49	0.0	0.18	0.0	0.0	0.17
St. Lucie	69.1	37.1	32.0	62.5	0.0	62.5	6.14	0.0	6.14	144	5.70	0.0	0.11	0.27	0.05	2.43
Santa Rosa	46.9	14.7	32.2	37.9	0.0	37.9	3.40	0.0	3.40	90	2.99	0.06	0.0	0.35	0.0	1.04
Sarasota	183.2	67.7	95.5	87.0	2.9	89.9	9.33	0.98	10.31	115	7.93	0.0	0.71	0.48	1.19	2.02
Seminole	136.4	48.9	67.5	63.1	0.0	63.1	10.45	0.0	10.45	166	9.40	0.0	0.0	0.92	0.13	3.13
Sumter	20.6	6.1	14.5	7.3	0.0	7.3	0.61	0.0	0.61	84	0.53	0.0	0.0	0.08	0.0	0.13
Suwannee	18.9	8.1	10.8	9.1	0.0	9.1	1.13	0.0	1.13	124	0.86	0.03	0.04	0.21	0.0	0.67
Taylor	14.6	8.9	6.0	10.6	0.0	10.6	1.37	0.0	1.37	132	1.03	0.0	0.0	0.30	0.04	0.54
Union	10.4	2.2	8.2	1.7	0.0	1.7	0.33	0.0	0.33	324	0.20	0.0	0.10	0.05	0.0	0.27
Volusia	212.4	137.0	75.4	141.7	0.0	141.7	25.06	0.0	25.06	170	21.22	0.0	1.76	1.83	0.25	12.07
Wakulla	8.8	0.7	8.1	4.5	0.0	4.5	0.26	0.0	0.26	58	0.26	0.0	0.0	0.0	0.0	0.06
Walton	18.9	6.5	11.5	10.6	0.0	10.6	1.08	0.0	1.08	102	0.96	0.0	0.02	0.10	0.02	0.52
Washington	14.1	6.0	8.1	6.4	0.4	6.8	0.59	0.0	0.59	87	0.58	0.0	0.0	0.01	0.0	0.07
State total	[13]8,685.1	4,932.1	3,753.1	6,006.1	806.6	6,812.8	984.88	160.93	1,145.81	168	923.58	24.71	80.90	83.62	33.00	559.97

[1] Includes 14.4 Mgal/d imported from Orange County.
[2] Includes an estimated 200,000 tourists in Dade County.
[3] Does not include 5.96 Mgal/d exported to Monroe County.
[4] Does not include 24.27 Mgal/d exported to Pinellas County.
[5] Includes 5.96 Mgal/d imported from Dade County and 1.71 Mgal/d pumped from Key Largo Limestone, used by Stock Island desalination plant, Key West.
[6] Does not include 14.4 Mgal/d exported to Brevard County.
[7] Does not include 15.7 Mgal/d exported to Pinellas County.
[8] Includes 24.27 Mgal/d exported from Hillsborough County and 15.7 Mgal/d exported from Pasco County.

TABLE I

EPA Hazard Ranking System Waste Characteristics Values
(Toxicity/Persistence Matrix)

Chemical/Compound	Ground Water and Surface Water Pathway Values	Air Pathway Values
Acenapthene	9	3
Acetaldehyde	6	6
Acetic Acid	6	6
Acetone	6	6
2-Acetylaminoflourene	18	9
Aldrin	18	9
Arsenic	9	9
Aniline	12	9
Anthracene	15	9
Arsenic	18	9
Arsenic Acid	18	9
Arsenic Trioxide	18	9
Asbestos	15	9
Barium	18	9
Benzene	12	9
Benzidine	18	9
Benzoapyrene	18	9
Benzopyrene, NOS	18	9
Beryllium & Compounds NOS	18	9
Beryllium Dust, NOS	18	9
Bis (2-Chloroethyl) Ether	15	9
Bis (2-Ethylhexyl Phthalate	12	3
Bromodichloromethane	15	6
Bromoform	15	6
Bromomethane	15	9
Cadmium	18	9
Carbon Tetrachloride	18	9
Chlordane	18	9
Chlorobenzene	12	6
Chloroform	18	6
3-Chlorophenol	12	6
4-Chlorophenol	15	9
2-Chlorophenol	12	6
Chromium	18	9
Chromium, Hexavalent (Cr^{+6})	18	9

Table I (cont.)

Chemical/Compound	Ground Water and Surface Water Pathway Values	Air Pathway Values
Chromium, Trivalent (Cr^{+3})	15	6
Copper & Compounds, NOS	18	9
Creosote	15	6
Cresols	9	6
4-Cresol	12	9
Cupric chloride	18	9
Cyanides (soluble salts), NOS	12	9
Cyclohexane	12	6
DDE	18	9
DDT	18	9
Diamitrotoluene	18	6
Dibromochloromethane	15	6
1, 2-Dibromo, 3-chloropropane	18	9
Di-N-Butyl-Phthalate	18	6
1, 4-Dichlorobenzene	15	6
Dichlorobenzene, NOS	18	6
1, 1-Dichloroethane	12	6
1, 2-Dichloroethane	12	9
1, 1-Dichloroethene	15	9
1, 2-cis-Dichloro-ethylene	12	3
1, 2-trans-Dichloro-ethylene	12	3
Dichloroethylene, NOS	12	3
2, 4-Dichlorophenol	18	6
2, 4-Dichlorophenoxyacetic Acid	18	9
Dicyclopentadiene	18	9
Dieldrin	18	9
2, 4-Dinitrotoluene	15	9
Dioxin	18	9
Endosulfan	18	9
Endrin	18	9
Ethylbenzene	9	6
Ethylene Dibromide	18	9
Ethylene Glycol	9	6
Ethyl Ether	15	3
Ethylmethacrylate	12	6

Table I (cont.)

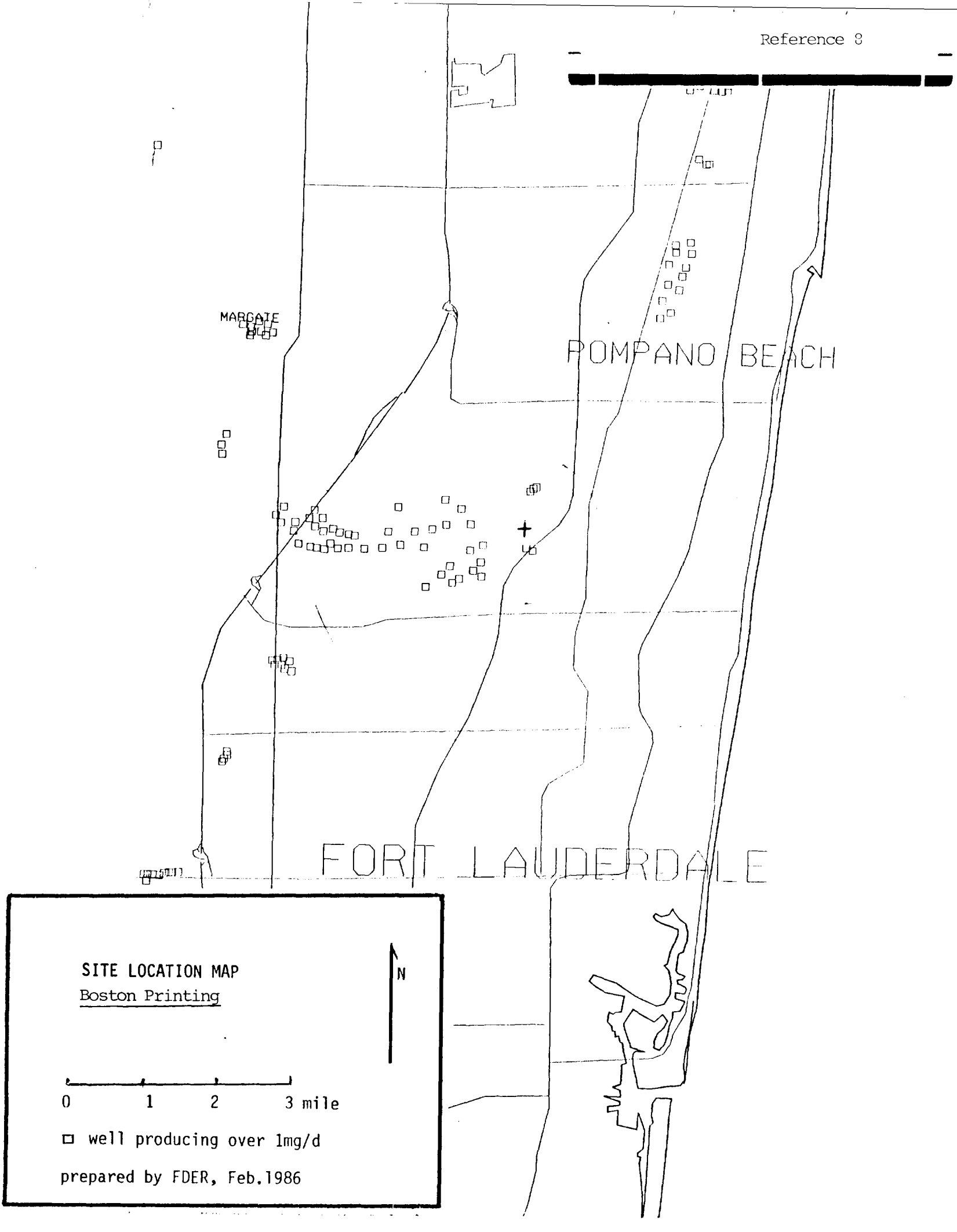
Chemical/Compound	Ground Water and Surface Water Pathway Values	Air Pathway Values
Fluorine	18	9
Formaldehyde	9	9
Formic Acid	9	6
Heptachlor	18	9
Hexachlorobenzene	15	6
Hexachlorobutadiene	18	9
Hexachlorocyclohexane, NOS	18	9
Hexachlorocyclopentadiene	18	9
Hydrochloric Acid	9	6
Hydrogen Sulfide	18	9
Indene	12	6
Iron & Compounds, NOS	18	9
Isophorone	12	6
Isopropyl Ether	9	3
Kelthane	15	6
Kepone	18	9
Lead	18	9
Lindane	18	9
Magnesium & Compounds, NOS	15	6
Manganese & Compounds, NOS	18	9
Mercury	18	9
Mercury Chloride	18	9
Methoxychlor	15	6
4, 4-Methylene-Bis-(2-Chloroaniline)	18	9
Methylene Chloride	12	6
Methyl Ethyl Ketone	6	6
Methyl Isobutyl Ketone	12	6
4-Methyl-2-Nitroaniline	12	9
Methyl Parathion	9	9
2-Methylpyridine	12	6
Mirex	18	9

Table 1 (cont.)

Chemical/Compound	Ground Water and Surface Water Pathway Values	Air Pathway Values
Naphthalene	9	6
Nickel & Compounds, NOS	18	9
Nitric Acid	9	9
Nitroaniline, NOS	18	9
Nitrogen Compounds, NOS	12	0
Nitroguanidine	12	9
Nitrophenol, NOS	15	9
m-Nitrophenol	15	
o-Nitrophenol	12	
p-Nitrophenol	15	
Nitrosodiphenylamine	12	6
Parathion	9	9
Pentachlorophenol (PCP)	18	9
Pesticides, NOS	18	9
Phenanthrene	15	9
Phenol	12	9
Phosgene	9	9
Polybrominated Biphenyl (PBB), NOS	18	9
Polychlorinated Biphenyls (PCB), NOS	18	9
Potassium Chromate	18	9
Radium & Compounds, NOS	18	9
Radon & Compounds, NOS	15	9
RDX (Cyclonite)	15	
2, 4-D, Salts & Esters	18	9
Selenium	15	9
Sevin (Carbaryl)	18	9
Sodium Cyanide	12	9
Styrene	9	6
Sulfate	9	0
Sulfuric Acid	9	9
2, 4, 5-T	18	9
1, 1, 2, 2-Tetrachloroethane	18	9
Tetrachloroethane, NOS	18	9
1, 1, 2, 2-Tetrachloroethene	12	6

Table I (cont.)

Chemical/Compound	Ground Water and Surface Water Pathway Values	Air Pathway Values
Tetraethyl Lead	18	9
Tetrahydrofuran	15	6
Thorium & Compounds, NOS	18	9
Toluene	9	6
TNT	12	
Toxaphene	18	9
Tribromomethane	18	9
1, 2, 4-Trichlorobenzene	15	6
1, 3, 5-Trichlorobenzene	15	6
1, 1, 1-Trichloroethane	12	6
1, 1, 2-Trichloroethane	15	6
Trichloroethane, NOS	15	6
Trichloroethene	12	6
1, 1, 1-Trichloropropane	12	6
1, 1, 2-Trichloropropane	12	6
1, 2, 2-Trichloropropane	12	6
1, 2, 3-Trichloropropane	15	9
Uranium & Compounds, NOS	18	9
Varsol	12	6
Vinyl Chloride	15	9
Xylene	9	6
Zinc & Compounds, NOS	18	9
Zinc Cyanide	18	9


MARGATE
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FORT LAUDERDALE
SITE LOCATION MAP
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N
0 1 2 3 mile
well producing over 1mg/d
prepared by FDER, Feb.1986

Dangerous Properties of Industrial Materials

Sixth Edition

N. IRVING SAX

Assisted by:

Benjamin Feiner/Joseph J. Fitzgerald/Thomas J. Haley/Elizabeth K. Weisburger

VAN NOSTRAND REINHOLD COMPANY
NEW YORK CINCINNATI TORONTO LONDON MELBOURNE

TOXICITY DATA:	3	CODEN:
orl-rat LD50:384 mg/kg		TXAPA9 18,185,71
ipr-mus LD50:376 mg/kg		TXAPA9 18,185,71

THR: HIGH oral and ipr.
Disaster Hazard: When heated to decomp it emits very tox fumes of Cl^- and NO_x.

BENZSULFOHYDROXAMIC ACID

CAS RN: 599713 NIOSH #: MX 9350000

TOXICITY DATA:	2	CODEN:
scu-mus LDLo:1000 mg/kg		AIPTAK 12,447,04

Reported in EPA TSCA Inventory, 1980.
THR: MOD scu.
Disaster Hazard: When heated to decomp it emits tox fumes of SO_x and NO_x.

BENZVALEN

mf: C_6H_6; mw: 78.11

Explosion Hazard: When scratched it will explode violently. It may be handled safely in an ether soln.

(3-(N-BENZYLACETAMIDO)-2,4,6-TRIIODOPHENYL)ACETIC ACID

CAS RN: 29193359 NIOSH #: AF 4950000
mf: $C_{17}H_{14}I_3NO_3$; mw: 661.02

TOXICITY DATA:	3-2	CODEN:
orl-mus LD50:1550 mg/kg		JMCMAR 13,559,70
ivn-mus LD50:235 mg/kg		JMCMAR 13,559,70

THR: HIGH ivn; MOD orl.
Disaster Hazard: When heated to decomp it emits very tox fumes of NO_x and I^-.

BENZYL ACETATE

CAS RN: 140114 NIOSH #: AF 5075000
mf: $C_9H_{10}O_2$; mw: 150.19

Liquid. mp: −51.5°, bp: 213.5°, flash p: 216°F (CC), d: 1.06, autoign. temp.: 862°F, vap. press: 1 mm @ 45°, vap. d: 5.1.

SYNS:

ACETIC ACID BENZYL ESTER	ALPHA-ACETOXYTOLUENE
ACETIC ACID PHENYLMETHYL ESTER	BENZYL ETHANOATE
	NCI-C06508

TOXICITY DATA:	3-2-1	CODEN:
ihl-hmn TCLo:50 ppm:IRR		TGNCDL 2,31,61
orl-rat LD50:2490 mg/kg		FCTXAV 2,327,64
ihl-mus LCLo:1300 mg/m3/22H		AGGHAR 5,1,33
ihl-cat LC50:245 ppm/8H		AMIHAB 21,28,60
skn-cat LDLo:10 gm/kg		JPETAB 84,358,45
orl-rbt LD50:2640 mg/kg		JPETAB 84,358,45
scu-rbt LDLo:3000 mg/kg		AGGHAR 5,1,33
scu-gpg LDLo:3000 mg/kg		AGGHAR 5,1,33

Currently Tested by NTP for Carcinogenesis by Standard Bioassay Protocol as of December 1980. Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.
THR: A hmn IRR via ihl. HIGH ihl. MOD orl, scu. LOW skn. See also esters.
Fire Hazard: Slight, when exposed to heat or flame; can react with oxidizing materials.
Spont Heating: No.
To Fight Fire: Alcohol foam, CO_2.
Disaster Hazard: When heated to decomp it emits acrid smoke and irr fumes.

BENZYLOXY ACETYLENE

mf: C_9H_8O; mw: 132.16

Explosion Hazard: If heated above 60° in vacuo it explodes.

BENZYL ALCOHOL

NIOSH #: DN 3150000
mf: C_7H_8O; mw: 108.15

Found in Jasmine, Hyacinth, Ylang-Ylang Oils and at least two dozen other essential oils (FCTXAV 11,-1011,73).
Water white liquid, faint aromatic odor. mp: −15.3°, bp: 205.7°, flash p: 213°F (CC), d: 1.050 @ 15°/15°, autoign. temp.: 817°F, vap. press: 1 mm @ 58.0°, vap. d: 3.72.

SYNS:

BENZAL ALCOHOL	PHENOLCARBINOL
BENZENECARBINOL	PHENYLCARBINOL
BENZENEMETHANOL	PHENYLMETHANOL
BENZOYL ALCOHOL	PHENYLMETHYL ALCOHOL
ALPHA-HYDROXYTOLUENE	ALPHA-TOLUENOL
NCI-C06111	

TOXICITY DATA:	3-2	CODEN:
skn-rbt 10 mg/24H MLD		AMIHBC 4,119,51
eye-rbt 750 ug SEV		AMIHBC 4,119,51
skn-pig 500 mg/24H MOD		FCTXAV 11,1011,73
orl-rat LD50:1230 mg/kg		FCTXAV 2,327,64
ihl-rat LC50:1000 ppm/8H		AMIHBC 4,119,51
ipr-rat LDLo:400 mg/kg		14CYAT 2,1409,63
scu-rat LDLo:1700 mg/kg		RMSRA6 15,561,1895
ivn-rat LD50:64 mg/kg		TXAPA9 18,60,71
orl-mus LD50:1580 mg/kg		FCTXAV 2,327,64
ivn-mus LD50:480 mg/kg		TXAPA9 18,60,71
ivn-dog LDLo:50 mg/kg		TXAPA9 18,60,71
par-dog LDLo:9 mg/kg		TXAPA9 25,153,73
skn-cat LDLo:10 gm/kg		JPETAB 84,358,45
ivn-cat LDLo:60 mg/kg		JPETAB 16,1,20
orl-rbt LD50:1040 mg/kg		JPETAB 84,358,45
skn-rbt LD50:2000 mg/kg		NPIRI* 1,6,74
ipr-gpg LDLo:400 mg/kg		14CYAT 2,1409,63
orl-bwd LD50:100 mg/kg		TXAPA9 21,315,72

Aquatic Toxicity Rating: TLm96:1000-100 ppm WQCHM* 4,-,74. *Toxicology Review:* 27ZTAP 3,-23,69. Currently Tested by NTP for Carcinogenesis by Standard Bioassay Protocol as of December 1980. Reported in EPA TSCA Inventory, 1980.
THR: MOD to HIGH oral depending upon species; MOD inhal. Skn, eye irr.
Fire Hazard: Slight, when exposed to heat or flame; can react with oxidizing materials and acids.
Spont Heating: No.

!OPEROXYCYCLOHEX-3-ENE

[: 4096337 NIOSH #: GW 6250000
$_{10}O_2$; mw: 114.16

!YDROPEROXY-3-CYCLOHEXENE

TY DATA:	3	CODEN:
DLo:6960 mg/kg/58W-		JNCIAM 35,707,65
D:8880 mg/kg/74W-		14JTAF -,275,64

n exper NEO,.ETA.
Hazard: When heated to decomp it emits acrid and fumes.

DROPEROXY-1'-OHEXYLPEROXY)-CYCLOHEXANOL

$_{22}O_5$; mw: 246.31

Bis-hydroxy peroxide; hazardous.
Hazard: When heated to decomp it emits acrid and fumes.

OPEROXY-1-VINYLCYCLOHEX-3-ENE

: 3736263 NIOSH #: GW 6260000
$_2O_2$; mw: 140.20

YDROPEROXY-4-VINYL-1-CYCLOHEXENE

TY DATA:	3	CODEN:
DLo:1440 mg/kg/24W-		14JTAF -,275,64
D:1440 mg/kg/24W-		JNCIAM 31,41,63

n exper NEO, ETA.
Hazard: When heated to decomp it emits acrid and fumes.

PHIS CYANOCINTUS (MALAYA) VENOM

NIOSH #: YX 4184700

!OM, SEA SNAKE, HYDROPHIS CYANOCINTUS (MALAYA)

TY DATA:	3	CODEN:
D50:240 ug/kg		85EGD4 5,357,78
D50:350 ug/kg		85EGD4 5,357,78

!GH ipr, ivn.

PHIS ELEGANS (AUSTRALIA) VENOM

NIOSH #: YX 4184900

!OM, SEA SNAKE, HYDROPHIS ELEGANS (AUSTRALIA)

TY DATA:	3	CODEN:
D50:120 ug/kg		85EGD4 5,357,78
D50:120 ug/kg		85EGD4 5,357,78

GH ivn, ims.

QUINIDINE

: 1435558 NIOSH #: MX 3016000
$_{26}N_2O_2$; mw: 326.48

Plates from ether, needles from alc; mp: 169°; very sol in hot alc; slightly sol in H_2O and ether.

TOXICITY DATA:	3	CODEN:
orl-rat LD50:369 mg/kg		ARZNAD 27,589,77
ivn-rat LD50:32 mg/kg		ARZNAD 27,589,77
ivn-mus LD50:76 mg/kg		JETOAS 8(3),188,75

THR: HIGH orl, ivn.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

HYDROQUINONE

CAS RN: 123319 NIOSH #: MX 3500000
mf: $C_6H_6O_2$; mw: 110.12

Colorless hexagonal prisms. mp: 170.5°, bp: 286.2°, flash p: 329°F (CC), d: 1.358 @ 20°/4°, autoign. temp.: 960°F (CC), vap. press: 1 mm @ 132.4°, vap. d: 3.81. Very sol in alc, ether. Slightly sol in benzene. Keep well closed and protected from light.

SYNS:

ARCTUVIN
P-BENZENEDIOL
1,4-BENZENEDIOL
BENZOHYDROQUINONE
BENZOQUINOL
1,4-DIHYDROXY-BENZEEN (DUTCH)
1,4-DIHYDROXYBENZEN (CZECH)
DIHYDROXYBENZENE
P-DIHYDROXYBENZENE
1,4-DIHYDROXYBENZENE
1,4-DIHYDROXY-BENZOL (GERMAN)
1,4-DIIDROBENZENE (ITALIAN)
P-DIOXOBENZENE
HYDROCHINON (CZECH, POLISH)
HYDROQUINOL
ALPHA-HYDROQUINONE
P-HYDROQUINONE
P-HYDROXYPHENOL
IDROCHINONE (ITALIAN)
NCI-C55834
BETA-QUINOL
USAF EK-356

TOXICITY DATA:	3	CODEN:
unk-rat LD50:720 mg/kg		GTPPAF 8,145,72
orl-mam LD50:480 mg/kg		TPKVAL 15,136,79
skn-hmn 2% MLD		ARDEAC 93,589,66
skn-hmn 5% SEV		ARDEAC 93,589,66
mmo-sat 400 uL/plate		BECTA6 24,590,80
sce-hmn:lym 40 umol/L		CNREA8 40,1189,80
orl-hmn LDLo:29 mg/kg		34ZIAG -,321,69
orl-rat LD50:320 mg/kg		FEPRA7 8,348,49
ipr-rat LD50:170 mg/kg		JIHTAB 31,79,49
scu-rat LDLo:300 mg/kg		HBTXAC 1,162,56
ivn-rat LD50:115 mg/kg		FEPRA7 8,348,49
orl-mus LD50:350 mg/kg		GTPZAB 22(9),35,78
ipr-mus LD50:100 mg/kg		NTIS** AD414-344
scu-mus LD50:190 mg/kg		INHEAO 5,143,67
unk-mus LD50:150 mg/kg		BJCAAI 6,160,52
orl-dog LD50:200 mg/kg		FEPRA7 8,348,49
ivn-dog LDLo:80 mg/kg		HBTXAC 1,162,56
orl-cat LD50:70 mg/kg		FEPRA7 8,348,49
scu-cat LDLo:50 mg/kg		AEXPBL 72,241,13
orl-rbt LDLo:550 mg/kg		HBTXAC 1,162,56
ipr-rbt LD50:125 mg/kg		JIHTAB 31,79,49
orl-gpg LD50:550 mg/kg		FEPRA7 8,348,49
ipr-gpg LDLo:200 mg/kg		HBTXAC 1,162,56
scu-gpg LDLo:300 mg/kg		HBTXAC 1,162,56
orl-pgn LD50:300 mg/kg		FEPRA7 8,348,49
scu-frg LDLo:190 mg/kg		HBTXAC 1,160,56
par-frg LDLo:190 mg/kg		AEPPAE 166,437,32

Carcinogenic Determination: Indefinite IARC** 15, 155,77.
TLV: Air: 2 mg/m3 DTLVS* 4,226,80. *Toxicology Review:* AEHLAU 23,6,71; MUREAV 47(2),75,78.

POTASSIUM HEXAOXYXENONATE(4-)-XENON TRIOXIDE

mf: $K_4O_6Xe \cdot 2O_3Xe$; mw: 611.02

THR: No tox data. Sensitive to shock; explodes violently.
Disaster Hazard: When heated to decomp it emits tox fumes of K_2O.

POTASSIUM HYDRIDE

mf: HK; mw: 40.11

White needles. mp: decomp; d: 1.43-1.47

THR: See potassium and hydrides.
Fire Hazard: Dangerous, by chemical reaction. See potassium.
Explosion Hazard: Mod, when exposed to heat or by chemical reaction.
Disaster Hazard: Dangerous; when heated to decomp it emits highly tox fumes of K_xO. Will react with water, steam or acids to produce H_2; can react vigorously with oxidizing materials.
To Fight Fire: CO_2, dry chemical.
Incomp: Air, Cl_2, F_2, acetic acid, acrolein, acrylonitrile, (CaC + Cl_2), ClO_2, (H_2O_2 + Cl_2), ($CHFl_3$ + CH_3OH), 1,2-dichloroethylene, maleic anhydride, (n-methyl-n-nitrosourea + CH_2Cl_2), nitroethane, NCl_3, nitromethane, nitroparaffins, o-nitrophenol, nitropropane, n-nitrosomethylurea, (nitrosomethylurea + CH_2Cl_2), H_2O, trichloroethylene, tetrahydrofuran, tetrachlorethane.

POTASSIUM HYDROXIDE

CAS RN: 1310583 NIOSH #: TT 2100000
mf: HKO; mw: 56.11

White, deliques pieces, lumps or sticks having crystalline fracture. mp: 360° ± 7°; bp: 1320°; d: 2.044. Violent, exothermic reaction with water.

SYNS:

CAUSTIC POTASH
HYDROXYDE DE POTASSIUM (FRENCH)
KALIUMHYDROXID (GERMAN)
KALIUMHYDROXYDE (DUTCH)
LYE
POTASSA
POTASSE CAUSTIQUE (FRENCH)
POTASSIO (IDROSSIDO DI) (ITALIAN)
POTASSIUM HYDRATE

TOXICITY DATA:	3	CODEN:
hma-rat/ast 1800 mg/kg		GANNA 254,155,63
skn-hmn 50 mg/24H SEV		TXAPA9 31,481,75
skn-rbt 50 mg/24H SEV		TXAPA9 31,481,75
skn-gpg 50 mg/24H SEV		TXAPA9 31,481,75
orl-rat LD50:365 mg/kg		TXAPA9 32,239,75

Aquatic Toxicity Rating: TLm96:100-10 ppm WQCHM* 4,-,74.
TLV: Air: 2 mg/m3 DTLVS* 4,345,80. *Toxicology Review:* ARTODN 39,299,78. DOT: Corrosive Material, Label: Corrosive FEREAC 41,57018,76. Reported in EPA TSCA Inventory, 1980.
THR: HIGH orl. Hmn skn irr. An exper skn irr. A poison. Very corr and irr to skn, eyes and mu mem. A general-purpose food additive. See also sodium hydroxide. Ingestion may cause violent pain in throat and epigastrium, hematemesis, collapse. Stricture of esophagus may result if not immediately fatal.
Incomp: Acids; ammonium hexachloroplatinate (2-); chlorine dioxide; germanium; hyponitrous acid; maleic anhydride; nitroalkanes; nitrobenzene; nitrogen trichloride; potassium peroxodisulphate; 2,2,3,3-tetrafluoropropanol; tetrahydrofuran; thorium dicarbide; 2,4,6-trinitrotoluene.

POTASSIUM HYDROXIDE (soln)

CAS RN: 1310583 NIOSH #: TT 2102000
mf: HKO; mw: 56.11

SYN: POTASSIUM HYDRATE (SOLN)

TOXICITY DATA:	3	CODEN:
skn-rbt 5 mg/24H MOD		TXAPA9 32,239,75
eye-rbt 1 mg/24H rns MOD		TXAPA9 32,239,75

DOT: Corrosive Material, Label: Corrosive FEREAC 41,57018,76. Reported in EPA TSCA Inventory, 1980.
THR: A very powerful skn, eye irr. See also potassium hydroxide and sodium hydroxide.

POTASSIUM HYPOCHLORITE (SOLUTION)

CAS RN: 7778667 NIOSH #: TT 2825000
mf: KOCl; mw: 90.55

SYN: HYPOCHLORITE SOLUTION (DOT)

TOXICITY DATA: 3
DOT: Corrosive Material, Label: Corrosive FEREAC 41,57018,76. Reported in EPA TSCA Inventory, 1980.
THR: HIGH tox all routes. Powerful irr and corrosive to skn, eyes and mu mem. See also hypochlorites.
Disaster Hazard: When heated to decomp it emits tox fumes of Cl^-.

POTASSIUM IODATE

CAS RN: 7758056 NIOSH #: NN 1350000
mf: $IO_3 \cdot K$; mw: 214.00

Colorless crystals. mp: 560°, d: 3.89. Insol in alc.

SYN: IODIC ACID, POTASSIUM SALT

TOXICITY DATA:	3-2	CODEN:
orl-mus LDLo:531 mg/kg		JPETAB 120,171,57
ipr-mus LD50:136 mg/kg		JPETAB 120,171,57
orl-gpg LDLo:400 mg/kg		FAONAU 40,113,67

Toxicology Review: 27ZTAP 3,81,69. Reported in EPA TSCA Inventory, 1980.
THR: HIGH via ipr; MOD via orl routes. A trace mineral added to animal feeds. Violent reaction with Al, As, C, Cu, metal sulfides, organic matter, P, S. See also iodates, oxidizeable matter.
Disaster Hazard: When heated to decomp it emits very tox fumes of I^- and K_2O.

POTASSIUM IODIDE

CAS RN: 7681110 NIOSH #: TT 2975000
mf: IK; mw: 166.00

SYNS:
SILICON TETRACHLORIDE TETRACHLOROSILANE

TOXICITY DATA: 2 CODEN:
ihl-rat LC50:8000 ppm/4H JIHTAB 31,343,49

Aquatic Toxicity Rating: TLm96:1000-100 ppm WQCHM* 4,-,74. DOT: Corrosive Material, Label: Corrosive FEREAC 41,57018,76. Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.

SKIN AND EYE IRRITATION DATA: CODEN:
skn-rbt 500 mg/24H SEV 28ZPAK -,14,72
eye-rbt 20 mg/24H SEV 28ZPAK -,14,72

THR: SEV skn, eye irr. MOD ihl. Decomp by water with much heat into silicic acid and HCl.
Disaster Hazard: Dangerous; when heated to decomp it emits highly tox fumes of HCl; will react with water or steam to produce heat and tox and corrosive fumes.
Incomp: Dimethyl sulfoxide, K, Na.

SILICON FLUORIDE

CAS RN: 7783611 NIOSH #: VW 2327000
mf: F_4Si; mw: 104.09

Colorless gas, very pungent odor; mp: −77°; bp: −65° @ 181 mm; d: 4.67.

TOXICITY DATA: 3 CODEN:
DOT: Nonflammable Gas, Label: Nonflammable Gas FEREAC 41,57018,76. Reported in EPA TSCA Inventory, 1980.
THR: No data. See also fluorides and hydrofluoric acid. Very irr to skn, eyes and mu mem.
Disaster Hazard: When heated to decomp it emits tox fumes of F^-.

SILICON OXIDE

mf: OSi; mw: 44.09

THR: No tox data. Explodes spontaneously in air.

SILICON TETRAAZIDE

mf: $N_{12}Si$; mw: 196.17

THR: No tox data. See also azides. Has exploded spont.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

SILK

NIOSH #: VW 2700000

TOXICITY DATA: 3 CODEN:
imp-rat TDLo:36 mg/kg:ETA CNREA8 15,333,55

THR: An exper ETA. In the form of dust it is an allergen and a nuisance dust. A MOD fire hazard and expl hazard.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

SILVER

CAS RN: 7440224 NIOSH #: VW 3500000
af: Ag; aw: 107.87

Soft, ductile, malleable, lustrous, white metal. mp: 961.93°, bp: 2212°, d: 10.50 @ 20°.

SYNS:
ARGENTUM SILBER (GERMAN)
C.I. 77820 SILVER ATOM
SHELL SILVER

TOXICITY DATA: 3 CODEN:
mul-rat TDLo:330 mg/kg/43W-I TFX:ETA ZEKBAI 63,586,60
imp-rat TDLo:2400 mg/kg TFX:ETA CNREA8 16,439,56
imp-mus TDLo:11 gm/kg TFX:ETA NATWAY 42,75,55
imp-rat TD:2570 mg/kg TFX:ETA NATWAY 42,75,55
ihl-hmn TCLo:1 mg/m3 TFX:SKN DTLVS* 3,231,71

TLV: Air: 0.1 mg/m3 DTLVS* 4,367,80. *Toxicology Review:* FOREAE 7,313,42; MIBUBI 9(4),321,75; PTPAD4 1,127,76; AJMEAZ 38,409,65; PEXTAR 12,102,69. OSHA Standard: Air: TWA 10 ug/m3 (SCP-N) FEREAC 39,23540,74. Reported in EPA TSCA Inventory, 1980.
THR: An exper ETA. A hmn SKN. See also silver compounds.
Fire Hazard: Mod, in the form of dust, when exposed to flame or by chemical reaction with C_2H_2, NH_3, bromoazide, ClF_3, ethylene imine, H_2O_2, oxalic acid, H_2SO_4, tartaric acid. See also powdered metals.
For further information see Vol. 1, No. 1 of *DPIM Report.*

SILVER ACETYLIDE

mf: C_2HAg; mw: 132.90

THR: No tox data. See also silver compounds.
Explosion Hazard: Very high.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

SILVER AMIDE

mf: AgH_2N; mw: 123.89

THR: No tox data. See also silver compounds. Very explosive when dry.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

SILVER 5-AMINOTETRAZOLIDE

mf: CH_2AgN_5; mw: 191.93

THR: No tox data. See also silver compounds. When heated it explodes.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

SILVER AMMONIUM COMPOUNDS

THR: See silver compounds.
Explosion Hazard: Severe, when shocked, exposed to heat or by chemical reaction.

Site Trip Summary 4807.17

Site Name : Boston Printing
Address : 741 NW 57TH PLACE
Ft. Lauderdale, FL 33309

On-Site Contact : Mr. George Stern
Reconnaissance Summary : An on-site interview was conducted with Mr. George Stern on Oct 3 1985. The sampling locations were identified and documented in field notes and photographs.
Inspectors : David Wilderman and Charles Goodwin
Sampling Summary : On December 18, 1985, a groundwater sampling episode was conducted at Boston Printing. Samples were collected from four one and one-quarter inch screened PVC wells installed by the sampling crew. Duplicate samples were collected at the GW-2 location, and sampler blanks were collected prior to initiation of sampling. All samples were collected for analysis of the following parameters :

- VOC
- Semi-VOC
- Pesticides / PCBs
- Metals
- Oil and Grease

In-situ measurements for pH, temperature, and conductivity were taken at each sample location.

All samples were shipped via Federal Express to the E.C. Jordan Company Environmental Laboratory for analysis

Sampling Team Members : Joseph Farry (ECJ)
Charles Goodwin (ECJ)
Joseph McGarrity (FDER)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FL	D073869414

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
BOSTON PRINTING CO. INC.	741 NW 57th PLACE

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Ft. LAUDERDALE	FL	33309	BROWARD	011	19

09 COORDINATES LATITUDE	LONGITUDE
26 12 30.0	080 09 20.0

10 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER _____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
10 / 1 / 86 (MONTH DAY YEAR)	☒ ACTIVE ☐ INACTIVE	1981 (BEGINNING YEAR) PRESENT (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☐ E. STATE ☒ F. STATE CONTRACTOR E.C. JORDAN CO. (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
DAVID WILDERMAN	FIELD GEOLOGIST	E.C. JORDAN CO.	(904) 656-1293
09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
CHUCK [illegible]	ENVIRONMENTAL TECH.	"	( ) "
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
BRUCE WARD	ACS OPERATOR	SAME	(305) 491-3121
GEORGE STERN	OWNER		( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	[illegible] +/- 1130	[illegible]

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
ERIC NUTTLE	FDER	(305) 433-2650

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
JOHN DUMESNIL	N/A	E.C. JORDAN CO.	904 656-1293	1 / 1 / 87 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FL	D073869414

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER (Specify)
- ☐ E. SLURRY
- ☒ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

- TONS: unknown
- CUBIC YARDS: unknown
- NO. OF DRUMS: unknown

03 WASTE CHARACTERISTICS (Check all that apply)

- ☐ A. TOXIC
- ☒ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☒ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☒ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☒ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☒ K. REACTIVE
- ☒ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			Recovered silver is stored in drums and picked up by a licensed hauler.
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	unknown		
IOC	INORGANIC CHEMICALS	unknown		
ACD	ACIDS			
BAS	BASES	unknown		
MES	HEAVY METALS	unknown		

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
MES	SILVER	7440-22-4	DR	unknown	
OCC	N-PROPANOL	71-23-8	Drainfield		
OCC	BENZYL ALCOHOL	100-51-6			
OCC	HYDROQUINONE	123-31-9			
BAS	POTASSIUM HYDROXIDE	1310-58-3			

check to verify that these chemicals are discharged to a drainfield.

V. FEEDSTOCKS (See Appendix for CAS Numbers) N/A

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E.C. Jordan Co. site inspection, 10/1/85
See attached reference list.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
FL	D073869414

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☒ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 10,000+
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Potential leaks in the effluent piping system could lead to surface spills which in turn could impact a pond 1500 southwest of the site. Past malfunctions of the drainfield system has caused standing water on-site. No surface water samples have been taken.

01 ☐ C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: 0
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Remote potential. The volatile chemicals at the site are contained in closed systems, thus, posing little threat to the general air quality.

01 ☒ D. FIRE/EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: 1-100
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
N-proparol, which is used on-site, is reactive and flammable. There have been no reports of past fires at the site.

01 ☒ E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: 1-100
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Workers may come in direct contact with volatile and toxic chemicals during work related activities.

01 ☐ F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: _____ (Acres)
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☒ H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: 1-100
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Workers may come in direct contact with volatile and toxic chemicals during work related activities.

01 ☐ I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
FL	D0 73869414

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Contact with contaminants may damage plantlife. There have been no damages to the plantlife on-site observed or reported.

01 ☒ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)
Contact with contaminants may injure wildlife ~~the~~ facility is located in a commercial/industrial are which is largely devoid of wildlife.

01 ☒ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Silver, which is recovered at the site, is persistent in the environment and may affect the food chain.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☒ OBSERVED (DATE: 6/8/84) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 1-100 — 04 NARRATIVE DESCRIPTION
The industrial drainfield on-site failed, and standing water collected on-site (6/8/84). No tests were made on the standing water or soil. BCEQCB issued an NOV on 7/12/84.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
None observed or reported.

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
None observed or reported

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
None observed or reported.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS
None Known.

III. TOTAL POPULATION POTENTIALLY AFFECTED: 10,000+

IV. COMMENTS
Samples of the effluent have been taken by ECEQCB (2/12/85). Results included methylene chloride (9.6 mg/l), chloroform (47 mg/l) and bromodichloromethane (11.4 mg/l). Other sampling found no problems.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)
E.C. Jordan Co. site inspection, 10/1/85
See attached reference list.

EPA FORM 2070-13 (7-81)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FL	DC738689414

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify) ID. #	FLD 073 869 414	3-8-85		
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES	5	GALL
☐ C. DRUMS, ABOVE GROUND	~ 15	55 gl
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)
- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☒ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify)

05 OTHER
- ☒ A. BUILDINGS ON SITE — 1

06 AREA OF SITE
0.5 (Acres)

07 COMMENTS

SILVER RECOVERY UNIT INSTALLED IN 1984 (2 FOLEY CHROM. UNIT SM-7). THE TREATED EFFLUENT, DISCHARGED INTO A DRAINFIELD ON THE NORTH SIDE OF THE BUILDING, IS TESTED MONTHLY BY RECYCLE.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☐ C. INADEQUATE, POOR ☒ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

DRUMS WERE LOCATED ON ~~AN~~ FENCED ASPHALT PAD. FENCE GATE WAS UNLOCKED AT TIME OF INSPECTION. APPROX. 6 RUSTY DRUMS WERE STACKED BY THE ROAD (NORTH END) APPARENTLY AWAITING PICKUP. A STRONG VOLATILE ODOR WAS DETECTED IN THE FACILITY (23ppm) INSPECTORS EXPERIENCED DIZZINESS AND TIGHTNESS IN LUNGS. ODOR WAS DETECTED OUTSIDE OF BUILDING AS WELL.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☒ YES ☐ NO

02 COMMENTS

DRUMS LOCATED IN AND AROUND AN OPEN FENCED AREA ON NORTH SIDE OF BUILDING

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

E.C. Jordan Co. site inspection, 10/1/85

See attached reference list.

EPA FORM 2070-13 (7-81)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE: FL | 02 SITE NUMBER: D073869414

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☐	B. ☒
NON-COMMUNITY	C. ☐	D. ☐

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☐
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE
A. < .5 (mi)
B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☒ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 226,430 (1975)
03 DISTANCE TO NEAREST DRINKING WATER WELL < .5 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
3.0 (ft)	southeast	3.0 (ft)	100 million (gpd)	☒ YES ☐ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)
The facility is located approximately 2000 feet east of a municipal drinking water well.

10 RECHARGE AREA		11 DISCHARGE AREA	
☒ YES ☐ NO	COMMENTS: REGIONALLY	☐ YES ☒ NO	COMMENTS: REGIONALLY

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☒ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
A small pond	☐	0.28 (mi)
	☐	(mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 1000 (NO. OF PERSONS)	B. 25,000 (NO. OF PERSONS)	C. 75,000 (NO. OF PERSONS)

02 DISTANCE TO NEAREST POPULATION
0.28 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE
> 5000

04 DISTANCE TO NEAREST OFF-SITE BUILDING
0.1 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)
THE BOSTON PAINTING CO. IS LOCATED .2 MILES EAST OF THE FT. LAUDERDALE EXECUTIVE AIRPORT. DENSELY POPULATED RESIDENTIAL AREAS ARE LOCATED WITHIN .3 MILE TO EAST OF THE SITE.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
FL	D073869414

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☐ B. $10^{-4} - 10^{-6}$ cm/sec ☒ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☒ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
UnKnown (ft)	UnKnown (ft)	≈ 7.0	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
8.0 (in)	10.85 (in)	0-1° %	EAST	0-1° %

09 FLOOD POTENTIAL	10
SITE IS IN 100 YEAR FLOODPLAIN	☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)		12 DISTANCE TO CRITICAL HABITAT (of endangered species)
ESTUARINE	OTHER	_____ (mi)
A. _____ (mi)	B. 2.5 (mi)	ENDANGERED SPECIES: None

13 LAND USE IN VICINITY

DISTANCE TO: COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS PRIME AG LAND	AG LAND
A. Immed (mi)	B. _____ (mi)	C. _____ (mi)	D. _____ (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E.C. Jordan Co. Site inspection, 10/1/85
See attached reference list.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FL	D07 3869414

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	4	E.C Jordan Laboratory, Portland, Maine	
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER	(2) blanks	E.C. Jordan Laboratory, Portland, Maine	

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS			
	GW-1	GW-2	GW-3	GW-4
pH	6.5	6.0	6.0	(data missing)
Conductivity (µmhos)	906	1100	321	" "
Temperature (°C)	22.0	26.8	25.9	" "

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF FDER Tallahassee, FL
(Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS site sketch

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E.C. Jordan Co. site inspection, 10/1/85
See attached reference list.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE FL	02 SITE NUMBER D073869414

II. CURRENT OWNER(S)			**PARENT COMPANY** *(If applicable)*		
01 NAME BOSTON PRINTING CO. INC.		02 D+B NUMBER	08 NAME M & G STERN CORP.		09 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)* 741 NW 57th PL		04 SIC CODE	10 STREET ADDRESS *(P.O. Box, RFD #, etc.)* SAME		11 SIC CODE
05 CITY FT LAUD.	06 STATE FLA	07 ZIP CODE 33309	12 CITY	13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER	08 NAME		09 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE	10 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		11 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER	08 NAME		09 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE	10 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		11 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER	08 NAME		09 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE	10 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		11 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

OUT OF BUSINESS →

III. PREVIOUS OWNER(S) *(List most recent first)*			**IV. REALTY OWNER(S)** *(If applicable; list most recent first)*		
01 NAME HOLLINGSWORTH SODERLESS TERMINAL CO		02 D+B NUMBER	01 NAME		02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)* 700 N. 57th PL		04 SIC CODE	03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE
05 CITY FT. LAUD	06 STATE FL	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
01 NAME		02 D+B NUMBER	01 NAME		02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE	03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
01 NAME		02 D+B NUMBER	01 NAME		02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE	03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

E.C. Jordan Co. Site inspection, 10/1/85
See attached reference list.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION
01 STATE: FL | 02 SITE NUMBER: D073969414

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
CARLOS PASOS	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
SAME	

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	02 D+B NUMBER
⊟ SAME	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E.C. Jordan Co. site inspection, 10/1/85
See attached reference list.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FL	D073869414

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
BOSTON PRINTING Co.	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
SAME	

05 CITY	06 STATE	07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
NONE			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S) PHILLIP MOFFETS -1-305-859-4441

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
CHEMICAL CONSERVATION CORP.			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
653 ROCKET BLVD.			
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
ORLANDO	FL 32824		
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E.C. Jordan Co. site inspection, 10/1/85
See attached reference list.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION
01 STATE: FL | 02 SITE NUMBER: D073869414

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION ~~N.~~ CITY WATER

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION N.

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NO

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION POSSIBLE

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION INTO 55 GALLON DRUM & TRANSPORTED OFFSITE.

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION YES

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION NO

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION ION-EXCHANGE ? 5 GAL / 2 TIMES DAILY.

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION ~~N~~ ELECTROSTATIC.

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FL	D073869414

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

III SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E.C. Jordan Co. Site inspection, 10/1/85
See attached reference list.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
FL	D073869414

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☒ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

WARNING NOTICES ISSUED DUE TO FLOODING OF DRAINFIELD.

~~NO LONG~~ — WARNING ISSUED.

EPA SAID (PAUL SHELTON) TO CONTINUE DISCHARGE. DO NOT PULL DRAINFIELD.

NOW - 2 SILVER RECOVERY UNITS IN SERIES. FACILITY COMPLIES.

~~redo~~

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

E.C. Jordan Co. site inspection, 10/1/85
See attached reference list.

EPA FORM 2070-13 (7-81)

Reference 11

BROWARD COUNTY ENVIRONMENTAL QUALITY CONTROL BOARD

500 S.W. 14th Court
Fort Lauderdale, Florida 33315
(305) 765-5881

June 26, 1984

Mr. Jim Orban
Environmental Protection Agency
345 Courtland St., N.E.
Atlanta, GA., 30365

Re: Hollingsworth Solderless Terminal Co. Site

Dear Jim:

It has come to our attention that the buildings formerly occupied by Hollingsworth Solderless Terminal Co. located at 700 N. 57th Pl., Ft. Lauderdale, Fl. have been leased to new tenants. The buildings and drainfields being investigated by EPA are located at the east end of NW 57th Pl., one of which is on the south side of the street and two buildings (presently connected) on the north side of NW 57th Pl.

The fourth building is located on the north side of NW 57th Pl. and immediately west of the two other buildings that have been connected. This building was used by Hollingsworth as a storage building and has a septic tank and drainfield located at the SE corner of the building. It is presently occupied by Boston Printing Co. They have occupied this building since July 1982. This property is not under investigation by EPA since Hollingsworth did not have any industrial discharge at this location. Boston Printing Co. has used the existing sanitary waste septic tank and drainfield for the disposal of rinse water (100 GPD) from a developing process. As a result the system has failed and the drainfield must be rebuilt. The industrial discharge will be eliminated. In the meantime they must rectify the existing drainfield.

We, therefore, would appreciate your approval to allow them to correct this problem.

If you have any questions on this matter please contact Rudy DeBenedictis of this office at (305) 765-5881.

Sincerely,

Bruce Kester

BRUCE KESTER, PE
CHIEF, WASTEWATER SECTION

BK/RD/lr

Engineering Report

VEASH WELLFIELD GROUNDWATER STUDIES AND MASTER PLAN FOR ONTAMINANT REMOVAL TREATMENT T THE EXECUTIVE AIRPORT AND ROSPECT WELLFIELDS

JECT NO. 8343

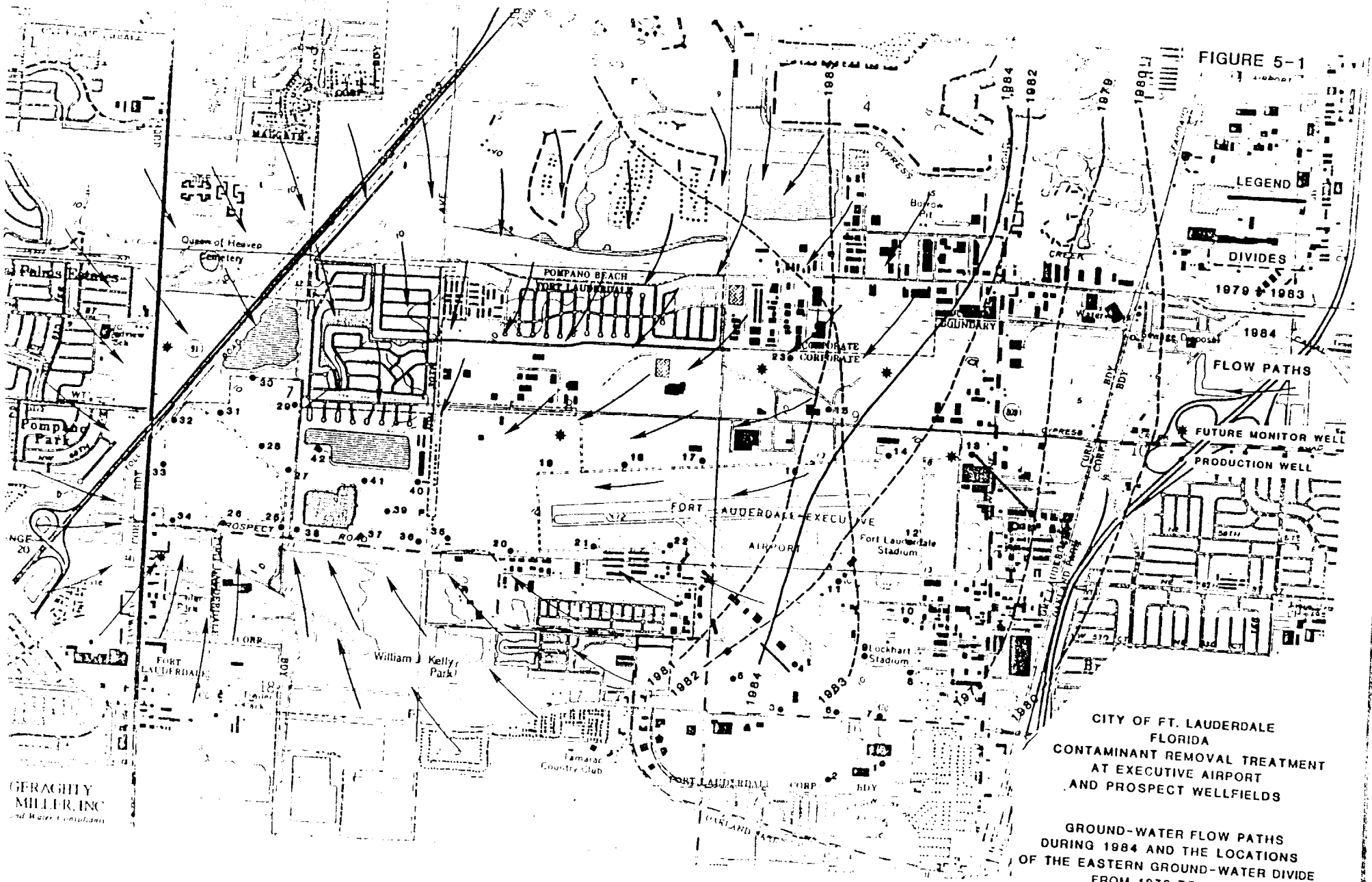
y of Fort Lauderdale, Florida

0
ber 1985

ALCOLM
PIRNIE

GERAGHTY
& MILLER, INC.

FIGURE 5-1



CITY OF FT. LAUDERDALE
FLORIDA
CONTAMINANT REMOVAL TREATMENT
AT EXECUTIVE AIRPORT
AND PROSPECT WELLFIELDS

GROUND-WATER FLOW PATHS
DURING 1984 AND THE LOCATIONS
OF THE EASTERN GROUND-WATER DIVIDE
FROM 1979 TO 1984

1 cm. = 1000 Ft.

GERAGHTY
MILLER, INC

LICENSE NO. 1W-

TRADE NAME OF HAZARDOUS MAT'LS	GENERIC NAME OF HAZARDOUS MAT'LS	CONTAINER SIZE (GAL)	TOTAL QUANTITY ON-SITE (GAL)	MONTHLY USE (Gal.)
Developer 922	Photo Developer	5	5	2
Replenisher for 922		5	5	7.5
Film Chemistry				
A.R. Replenisher		5	5	10
B.R. "		5	5	5
C.R. "		5	5	5
124 Fix	Fixer	5	5	5
125 Hardener	Hardener	1	1	1

MATERIAL SAFETY DATA SHEET

SECTION I

Manufacturer's Name Polychrome	Emergency Telephone No. (914) 965-8800
Address (Number, Street, City, State, and ZIP Code) 137 Alexander Street, Yonkers, N.Y. 10702	
Chemical Name and Synonyms	Trade Name and Synonyms No. 922 Developer
Chemical Family	Formula See below

SECTION II INGREDIENTS

	%	TLV
Lithium Benzoate	26.03	N.A.
Surfactants	29.5	N.A.
Sodium Citrate	6.18	N.A.
N-Propanol	9.64	500mg/m^3
Benzyl Alcohol	3.61	N.A.

SECTION III PHYSICAL DATA

Boiling Point (°F.)		Specific Gravity (H_2O=1)	
Vapor Pressure (mm Hg.)		Percent Volatile By Volume (%)	
Vapor Density (Air=1)		Evaporation Rate (_____=1)	
Solubility in Water			
Appearance and Odor			

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method used)	Flammable Limits	Lel	Uel

Extinguishing Media Foam, CO_2

Special Fire Fighting Procedures Gas masks to protect against dangerous combustion products

Unusual Fire and Explosion Hazards

2

MATERIAL SAFETY DATA SHEET

SECTION I

Manufacturer's Name: Polychrome Corporation	Emergency Telephone No.: (914) 965-6800
Address (Number, Street, City, State, and ZIP Code): 137 Alexander St. Yonkers New York 10702	
Chemical Name and Synonyms:	Trade Name and Synonyms: 922-R Replenisher for 922
Chemical Family:	Formula: See below

SECTION II INGREDIENTS

	%	TLV
Normal Propyl alcohol	92.09	500 ppm/m³
Surfactant	5.36	N.A.
Benzyl Alcohol	2.54	N.A.

SECTION III PHYSICAL DATA

Boiling Point (°F.)		Specific Gravity (H2O=1)	
Vapor Pressure (mm Hg.)		Percent Volatile By Volume (%)	
Vapor Density (Air=1)		Evaporation Rate (_____=1)	
Solubility in Water			
Appearance and Odor			

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method used): Less than 81°F (Setaflash)	Flammable Limits	Lel	Uel
Extinguishing Media			
Special Fire Fighting Procedures: Foam, CO_2			
Unusual Fire and Explosion Hazards: NIOSH-certified respirator for protection against combustion products			

B.

MATERIAL SAFETY DATA SHEET

SECTION I

urer's Name: Polychrome Corporation	Emergency Telephone No.: (914) 965-8800
(Number, Street, City, State, and ZIP Code): Alexander Street; Yonkers, N.Y. 10702	
l Name and Synonyms	Trade Name and Synonyms: AR-1701 Replenisher
l Family: ographic Processing Solution	Formula

SECTION II INGREDIENTS

	%	TLV
Hydroquinone (123-31-9)	11.7	2mg/m^3

SECTION III PHYSICAL DATA

g Point (°F.)		Specific Gravity (H2O=1) @25°C	1.187
Pressure (mm Hg.)		Percent Volatile By Volume (%)	
Density (Air=1)		Evaporation Rate (_____=1)	
lity in Water		pH @25°C	7.45
ance and Odor			

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Point (Method used)	Flammable Limits	Lel	Uel
inishing Media			
l Fire Fighting Procedures			
l Fire and Explosion Hazards			

MATERIAL SAFETY DATA SHEET

SECTION I

Manufacturer's Name: Polychrome Corporation	Emergency Telephone No.: (914) 965-8800
Address (Number, Street, City, State, and ZIP Code): 137 Alexander Street; Yonkers, N.Y. 10702	
Chemical Name and Synonyms	Trade Name and Synonyms: BR-1702 Replenisher
Chemical Family: Photographic Processing Solution	Formula

SECTION II INGREDIENTS

	%	TLV
Potassium Hydroxide (1310-58-3)	1.23	2mg/m^3

SECTION III PHYSICAL DATA

Boiling Point (°F.)		Specific Gravity (H2O=1) @25°C	1.250
Vapor Pressure (mm Hg.)		Percent Volatile by Volume (%)	
Vapor Density (Air=1)		Evaporation Rate (_____=1)	
Solubility in Water		pH @25°C	12.77
Appearance and Odor			

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method used)	Flammable Limits	Lel	Uel

Extinguishing Media

Special Fire Fighting Procedures

MATERIAL SAFETY DATA SHEET

SECTION I

Manufacturer's Name: Polychrome Corporation	Emergency Telephone No.: (914) 965-8800
Address (Number, Street, City, State, and ZIP Code): 137 Alexander Street; Yonkers, N.Y. 10702	
Chemical Name and Synonyms	Trade Name and Synonyms: CR-F703 Replenisher
Chemical Family: Photographic Processing Solution	Formula:

SECTION II INGREDIENTS

	%	TLV
Potassium Hydroxide (1310-5803)	2.07	2mg/m^3

SECTION III PHYSICAL DATA

Boiling Point (°F.)		Specific Gravity (H_2O=1) @25°C	1.290
Vapor Pressure (mm Hg.)		Percent Volatile By Volume (%)	
Vapor Density (Air=1)		Evaporation Rate (_____=1)	
Solubility in Water		pH @ 25°C	12.30
Appearance and Odor			

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method used)	Flammable Limits	Lel	Uel

Extinguishing Media

Special Fire Fighting Procedures

Unusual Fire and Explosion Hazards

WORKPLACE STANDARDS ADMINISTRATION
Bureau of Labor Standards

Oct. 18, 1976

MATERIAL SAFETY DATA SHEET

SECTION I

MANUFACTURER'S NAME: Polychrome	EMERGENCY TELEPHONE NO.
ADDRESS (Number, Street, City, State, and ZIP Code): P.O. Box 817, Yonkers, N.Y. 10702	
CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS: Rapid Fixer #12
CHEMICAL FAMILY	FORMULA

SECTION II HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
Ammonium thiosulfate	48	N.A.
Sodium acetate	0	N.A.
Sodium bisulfate	2.	N.A.
Boric acid	2	N.A.
Acetic acid glacial	2.3	10pp

SECTION III PHYSICAL DATA

BOILING POINT (°F.)		SPECIFIC GRAVITY (H_2O=1)	
VAPOR PRESSURE (mm Hg.)		PERCENT VOLATILE BY VOLUME (%)	
VAPOR DENSITY (AIR=1)		EVAPORATION RATE (=1)	
SOLUBILITY IN WATER			

APPEARANCE AND ODOR

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel	Uel

EXTINGUISHING MEDIA: Non-flammable liquid

SPECIAL FIRE FIGHTING PROCEDURES: None

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

Bureau of Labor Standards

MATERIAL SAFETY DATA SHEET

SECTION I

MANUFACTURER'S NAME: Polychrome	EMERGENCY TELEPHONE NO.
ADDRESS (Number, Street, City, State, and ZIP Code)	
CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS: Hardener #125
CHEMICAL FAMILY	FORMULA

SECTION II HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
Aluminum sulfate	35	N.A.
Sulfuric acid	2	1 mg/m³

SECTION III PHYSICAL DATA

BOILING POINT (°F.)		SPECIFIC GRAVITY (H_2O=1)	
VAPOR PRESSURE (mm Hg.)		PERCENT VOLATILE BY VOLUME (%)	
VAPOR DENSITY (AIR=1)		EVAPORATION RATE (=1)	
SOLUBILITY IN WATER			
APPEARANCE AND ODOR			

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method Used)	Non-flammable	FLAMMABLE LIMITS	LEL / UEL
EXTINGUISHING MEDIA	Not necessary		
SPECIAL FIRE FIGHTING PROCEDURES	Not necessary		
UNUSUAL FIRE AND EXPLOSION HAZARDS	None		

MATERIAL SAFETY DATA SHEET

SECTION I

Manufacturer's Name	Emergency Telephone No.
Polychrome Corporation	(914) 965-8800

Address (Number, Street, City, State, and ZIP Code)	
137 Alexander St. Yonkers New York 10702	
Chemical Name and Synonyms	Trade Name and Synonyms 125 Hardener Part 2
Chemical Family	Formula See below

SECTION II INGREDIENTS

	%	TLV
Aluminum Sulfate	29.1	N.A.
Sulfuric Acid	1.8	1mg/m^3

SECTION III PHYSICAL DATA

Boiling Point (°F.)		Specific Gravity (H_2O=1)	
Vapor Pressure (mm Hg.)		Percent Volatile By Volume (%)	
Vapor Density (Air=1)		Evaporation Rate (_____=1)	
Solubility in Water			
Appearance and Odor			

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method used)	Flammable Limits	Lel	Uel
Non-flammable			

Extinguishing Media

Special Fire Fighting Procedures

Unusual Fire and Explosion Hazards

MATERIAL SAFETY DATA SHEET

SECTION I

Manufacturer's Name	Emergency Telephone No.
Polychrome	(914) 965-8800

Address (Number, Street, City, State, and ZIP Code)
137 Alexander St. Yonkers New York 10702

Chemical Name and Synonyms	Trade Name and Synonyms

Chemical Family	Formula
	See below

SECTION II INGREDIENTS

	%	TLV
Anionic Surfactant	0.99	N.A.
Casein, 62% solution	30.56	N.A.
Formaldehyde, 37%	0.40	3mg/m³
This is a harmless aqueous solution of vegetable starch. The amount of formaldehyde present is not sufficient to constitute a hazard.		

SECTION III PHYSICAL DATA

Boiling Point (°F.)		Specific Gravity (H_2O=1)	
Vapor Pressure (mm Hg.)		Percent Volatile By Volume (%)	
Vapor Density (Air=1)		Evaporation Rate (_____=1)	
Solubility in Water			
Appearance and Odor			

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method used)	Flammable Limits	Lel	Uel
Non-flammable			

Extinguishing Media

Special Fire Fighting Procedures

Unusual Fire and Explosion Hazards

MEMORANDUM

Reference 19

DATE: Sept. 5, 1984 (1040 - 1130 HRS)

TO: File

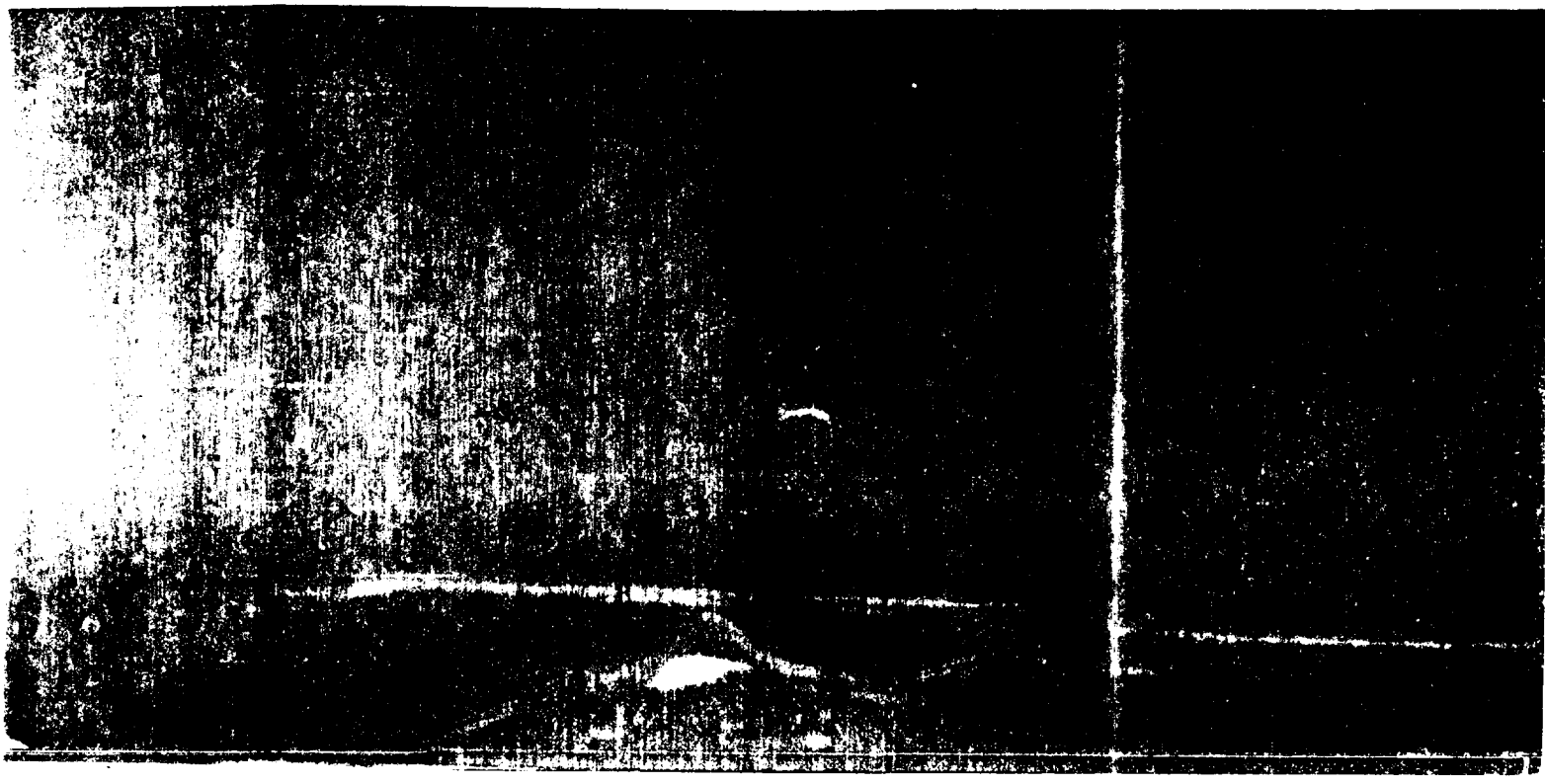
FROM: P.R. Shelton

SUBJECT: Boston Printing Co. - 741 NW. 57 PL., FtL - update on new & contaminated Drainfields

Saturated Drainfield observed in front of Bldg. from septic tank handling sanitary sewage from Bldg. see photo (1) for detail.

New Industrial drainfield installed in back of Bldg. see photo (2) for detail.

PRS



~~T340~~ 8-29-84

NDUM

Toby of Roto-Rooter

Re: Boston Printing

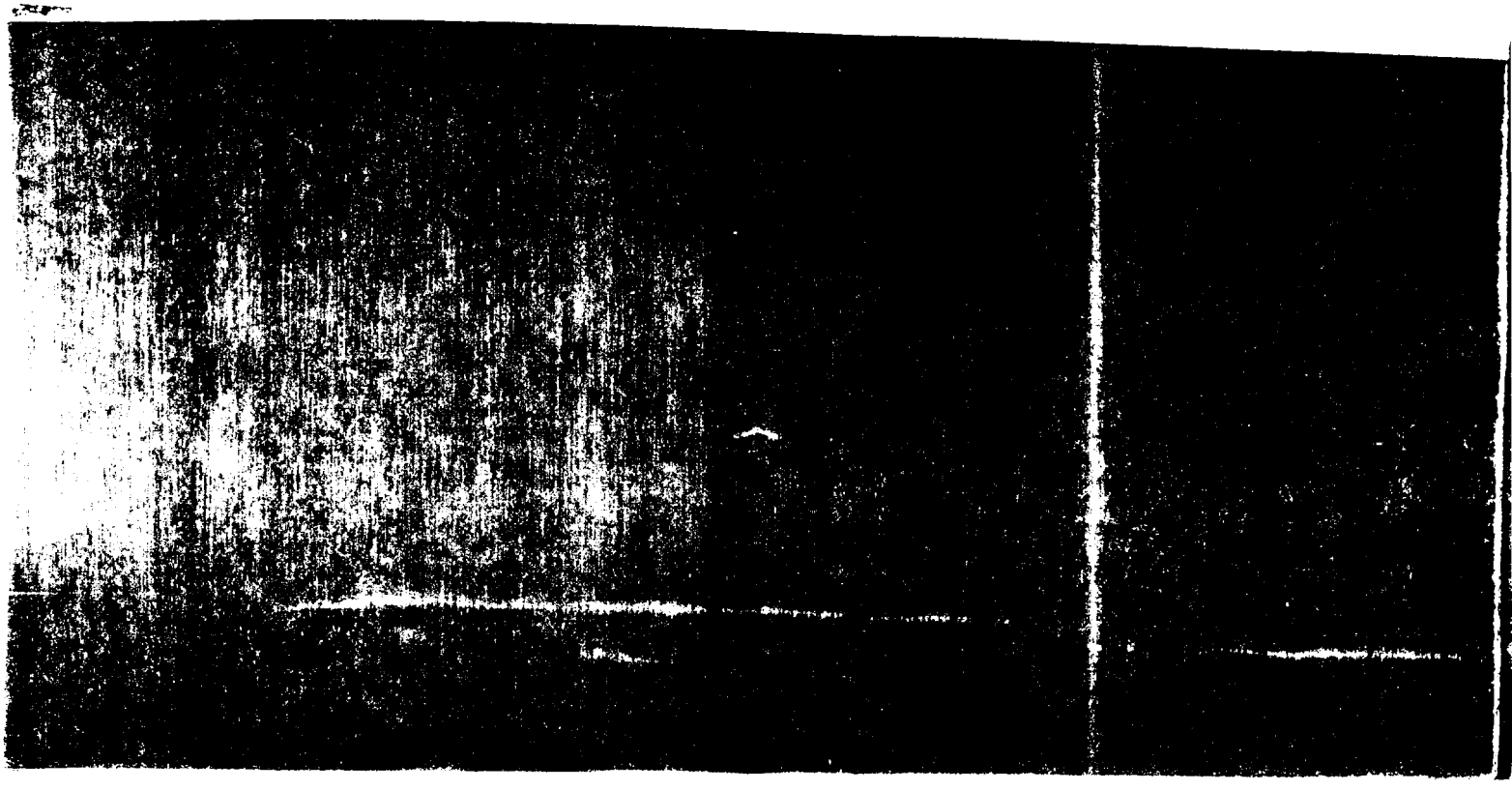
Old contaminated drainfield is not being removed. A new drainfield is being installed in the back.

1.57 PL., FHL - update on new & contaminated Drainfields

Saturated Drainfield observed in front of Bldg. from septic tank handling sanitary sewage from Bldg. see photo (1) for detail.

New Industrial drainfield installed in back of Bldg. see photo (2) for detail.

PRF



Card Made	
On File	X
None Made	

BROWARD COUNTY ENVIRONMENTAL QUALITY CONTROL

PS

DATE 6/8/84 TIME 1528 COMPLAINT NUMBER 627

SOURCE Boston Printing Co. George Stern - owner PHONE 491-2121

ADDRESS 741 NW 57 Pl. CITY Ft. Lau.

COMPLAINANT Carl Shallenberger, Inspector for the PHONE 492-7844

ADDRESS City of Ft. Lauderdale CITY

566-3974 Toby / Rotorooter septic PHONE

ADDRESS CITY

NATURE OF COMPLAINT source dumping hazardous material into septic tank/drainfield.

STATEMENT OF COMPLAINANT

(1) Developer - polychrome (sheet) film - silver nitrate 400 unit 20x26 sheet
(2) fixer - polychrome 124 chemical to water
(3) Rinse water 14 ft.
(4) discharges into septic - 162/1000 gal
(5) malfunction septic tank/drainfield

Will the complainant appear in court?

( ) Yes ( ) No (date) (signature)

ACTION TAKEN		WEATHER CONDITIONS 6-11-84
No Action	REFERRAL	Sky cloudy, sunny
✓ Further Investigation	To EQCB wastewater section Ruby DeBoer/RS	Visibility good
Surveillance	Date 6-12-84	Wind Direction S.E
Monitor	Reply Due	Velocity 5 mph
✓ Warning Notice 6-12-84	Reply Received	
Notice of Violation		
Cease and Desist		

PC 202 REV 8/83

INSPECTOR'S REPORT

TIME ON PREMISES: IN 0945 hrs OUT: 1100 hrs DATE: June 11, 1984

STATEMENT OF SOURCE:

Name

Title (signature)

INSPECTOR'S FINDINGS/RECOMMENDATIONS

6-11-84 (0945-1100 hrs) - met w/ George Stern, owner of Company. He informed me sanitary waste & processing waste discharges into septic tank/drainfield system. I observed open septic tank in front of bldg. see photo #1 for detail & open drainfield see photo #2 for detail. he informed me that septic tank system has been malfunction since 6-8-84 the process waste is runoff from commercial printing: Developer, fixer, hardener & rinse water these chemicals are consider toxic/hazardous waste material.

6-12-84 (1120-1145 hrs) - warning notice issued to owner to contact water section w/ proposal plan for remedial action

6-19-84 - (1435-1500 hrs) - open drainfield & septic still present. Chlorination still being done.

6-28-84 - open drainfield & septic tank see photo #1 & 2 for detail. (1130-1200 hrs)

6-29-84 (0825 hrs) - Conversation w/ Rudy DeBenedictis revealed wastewater is actively handling compliance. see attached letter date 6-26-84

7-12-84 (1355-1430 hrs) - unearthed septic & overflowing drainfield observed myself out of office & time of inspection

7-17-84 - citation issued for General discharges

COMPLAINANT NOTIFIED 7-17-84 (date)

CASE CLOSED 7-17-84 (date)

METHOD: Telcon w/ Mr Stallenberger secretary @ 0916 hrs

P.R. Shelton (signature)

Reference 15

HOLLINGSWORTH SOLDERLESS TERMINAL COMPANY
FEASIBILITY STUDY FINAL REPORT

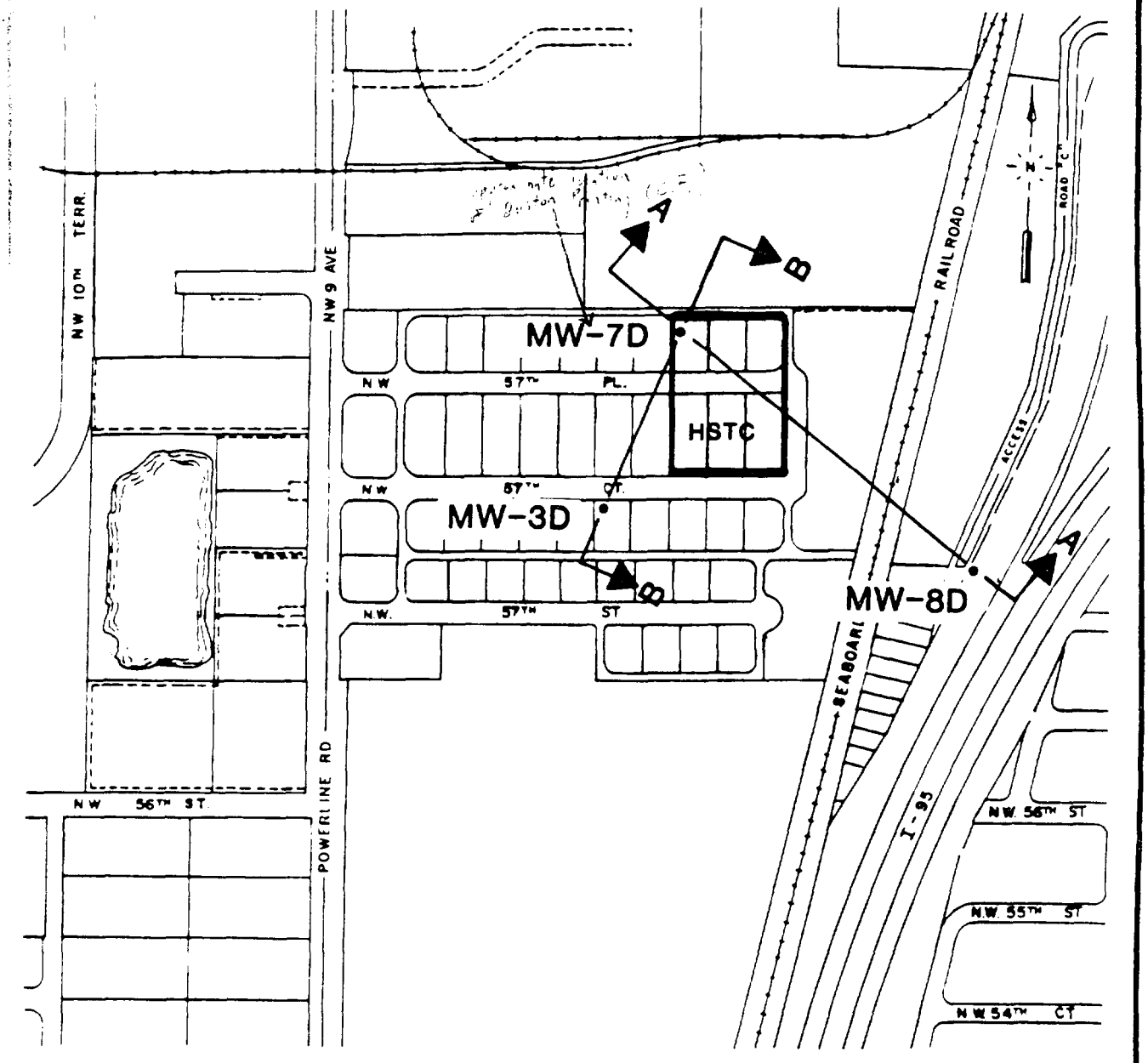
MAY 5, 1986

DOCUMENT CONTROL NUMBER
119-FS1-RT-CMCF-1

PERFORMANCE OF REMEDIAL RESPONSE ACTIVITIES AT UNCONTROLLED HAZARDOUS WASTE SITES

U.S. EPA CONTRACT NO. 68-01-6939

CAMP DRESSER & McKEE INC.
ROY F. WESTON, INC.
WOODWARD-CLYDE CONSULTANTS
CLEMENT ASSOCIATES, INC.
ICF INCORPORATED
C. C. JOHNSON & ASSOCIATES, INC.



LEGEND

- MONITOR WELL

SCALE: 1" = 400'

REM II

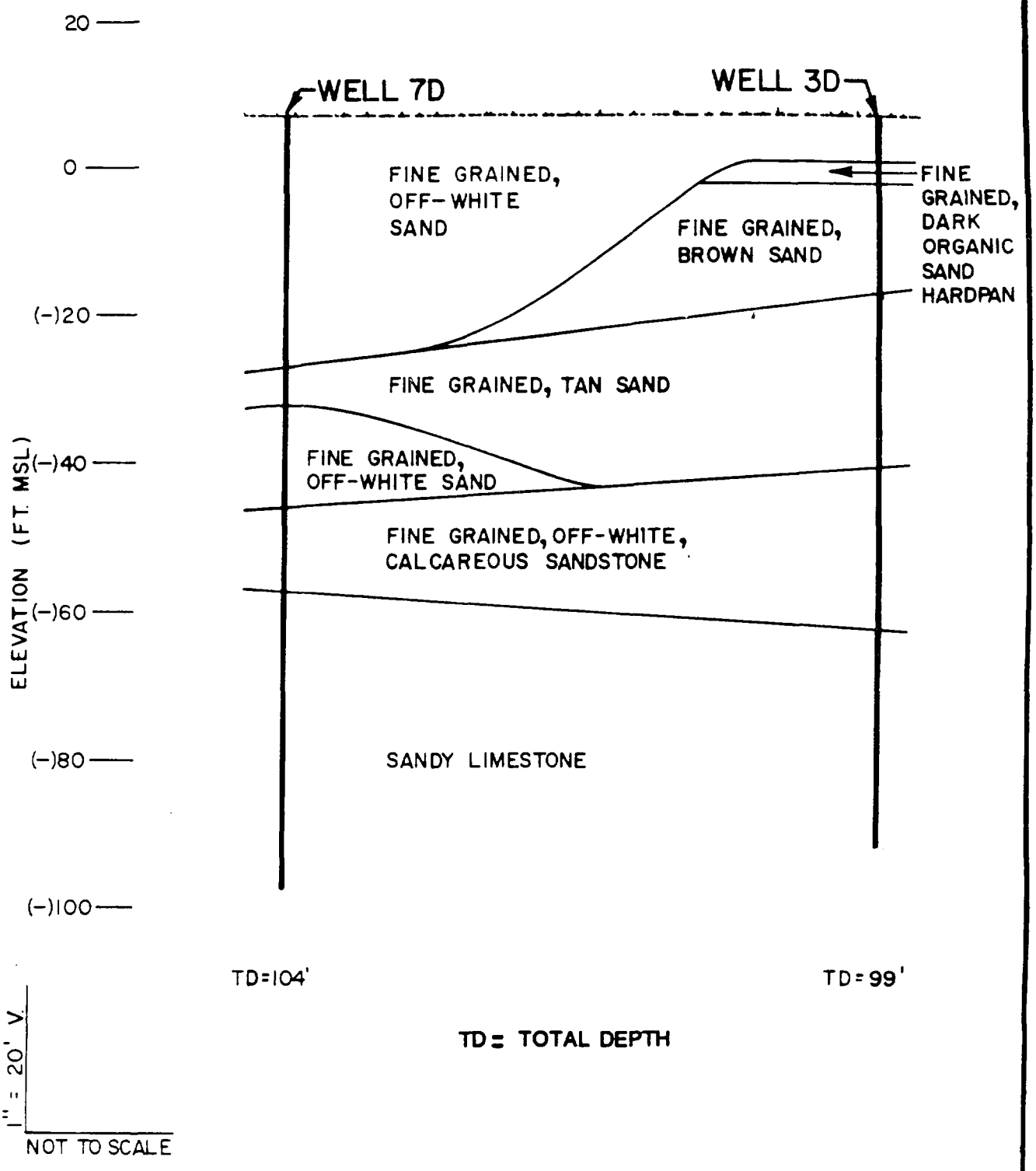
CROSS SECTION LOCATIONS

HOLLINGSWORTH SOLDERLESS TERMINAL COMPANY

FORT LAUDERDALE, FLORIDA

FIGURE NO.

1-6



REM II

GEOLOGIC CROSS SECTION B-B

HOLLINGSWORTH SOLDERLESS TERMINAL COMPANY

FORT LAUDERDALE, FLORIDA

FIGURE NO. 1-8

The Biscayne Aquifer, which is a highly permeable, wedge-shaped, unconfined shallow aquifer composed of limestone and sandstone, underlies the site and is the primary source of drinking water for 3 million residents of South Florida. Both the Executive Airport and Prospect Lake wells tap the Biscayne Aquifer for water supply. The top of the aquifer is near the natural ground surface and its base is approximately 250 feet below ground surface in the area of the site. The upper 60-70 feet of the aquifer are primarily composed of fine to medium grained sands. This zone is underlain by a transition zone of cemented shell and sandstone and finally by the limestone which forms the major water producing zone of the Biscayne Aquifer. The regional direction of ground water flow is southeast.

The Atlantic Ocean is located approximately five miles to the east of the site and the Everglades lie about 10 miles to the west. Cypress Creek Canal is located approximately 1.5 miles north of the site and Middle River Canal is located about 2 miles to the south. The average rainfall for this area is approximately 60 inches per year, much of which comes in short, intense thunderstorms during the summer months. The site is located within the 100 year flood plain and is topographically flat.

Site History and Enforcement Activities

From 1968-1982, HSTC was in the business of manufacturing solderless electrical terminals, consisting of a conductive metal portion and a plastic sleeve. The terminals were designed to attach by means of crimping rather than by soldering. The manufacturing process included heat treatment in molten salts baths, degreasing, and electroplating. The primary contaminants of concern at the site include trichloroethene (trichloroethylene), vinyl chloride, trans-1,2-dichloroethene, and to a lesser extent, nickel, tin, and copper.

For approximately eight years, HSTC disposed of wash water and process wastewater contaminated with trichloroethene (TCE), and/or heavy metals into drainfields adjacent to the manufacturing plant (see Figure 2). Disposal practices at the site have been clearly documented; however, the

Reference 16

EXISTING OR NEW INDUSTRIAL SOURCE INVESTIGATION

DATE 4/21/88 INSPECTOR R. Shelton

1. Source Boston Printing Co. Inc.

2. Address 741 NW 57 PL (Street) Fort Laud. (City & State) FL 33309 (Zip)

Mailing Address (If different) same (Street) same (City & State) " (Zip)

3. Name of Principal George Stern (Title) Pres. (Phone) 491-2121

4. Nature of Operation Printing Company SIC#

5. Operational Pattern: 12 hrs/day 6 days/week 30 No. of Employees

6. Process employed (2) silver recovery units

7. Processing Materials Used:

Material	Rate/Mo.
see attach	
chemical list	

8. Storage Tanks

Size	Material

9. Wastewater Emission Points

On Public Sewers: ___ Yes ✓ No septic tank Total H_2O Usage GPD

Disposal of Industrial Effluent & Treatment septic tank to D/F
final rinse water off of Developing units

Processing Tanks	Size	Solution	Discharged to	Permit

Sludge Generated and Materials Disposal

Quant/Month	Type	Disposal means
(8) 55 gal drums	waste from Developer unit	→ Pending approval by chem. waste mgmt
(2)		

10. Boiler BTU/Hr. Fuel

11. Air Emission Points

Source	Control Device	Mtr. HP	Lic/Perm.#	Expir. Date
N/A				

12. Solid Waste Dumpster: ✓ Yes ___ No Southern Sanitation Hauling Firm

13. Person contacted Carlos (Name) Production mgr. (Title) 491-1212 (Phone)

IC 129
rev 7-13-81

Time In [illegible]

Time Out [illegible]

Date 4-18-85

Zone 2

FACILITY INSPECTION REPORT

Source Boston Printing Co. Source No. 581

Potential Pollution Emission Pts. *(Problem)	Control Equipment(E)/Procedures(P)			
1. Domestic septic tank D/F	In Use ✓	Not In Use	Effective P	Ineffective
2.	In Use	Not In Use	Effective	Ineffective
3. Industrial septic tank D/F	In Use ✓	Not In Use	Effective P	Ineffective
4.	In Use	Not In Use	Effective	Ineffective
5. Hazardous waste drum storage	In Use ✓	Not In Use	Effective P	Ineffective
6.	In Use	Not In Use	Effective	Ineffective
7.	In Use	Not In Use	Effective	Ineffective
8.	In Use	Not In Use	Effective	Ineffective

Comments: met with Carlos @ above facility. The Domestic septic tank & D/F is operational & functional. also the industrial septic tank & D/F is operational & functional. 10-12 drums of hazardous waste stored in back fence-in area.

Person Contacted: Carlos Title Production Mgr.

Next Contact Date: 7-18-85 Inspector(s) D.R. Shelton

OFFICE USE ONLY

Referred to: ☐ Air ☐ Wastewater Eng. Date: REF.#

Warning Notice Issued: At Insp. From Office: Date

Violation Issued: At Insp. From Office: Date

229
8-81 Rev.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

OUTHEAST FLORIDA
ISTRICT
:01 GUN CLUB ROAD
O. BOX 3858
EST PALM BEACH, FLORIDA 33402

BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY
ROY DUKE
DISTRICT MANAGER

RECEIVED
APR 12 1985
Dept. of Environmental Reg.
West Palm Beach

PAID
$50.00
APR 12, 1985
- 14136
Dept. of Environmental Reg.
West Palm Beach

APPLICATION TO OPERATE/CONSTRUCT INDUSTRIAL WASTEWATER TREATMENT AND DISPOSAL SYSTEMS

Type application: [X] Operation [ ] Temporary Operation [ ] Construction

Source Status: [ ] New [X] Existing [ ] Modification

Source Name: Boston Printing Co. County: Broward

Source Location: Street: 741 N.W. 57 Place City: Ft. Lauderdale

Latitude 26 ° 12 ' 0 " Longitude 80 ° 9 ' 0 "

Applicant Name and Title: George Stern (President)

Applicant Address: 741 N.W. 57 Place, Ft.Lauderdale, FL 33309

DIRECTIONS

1. All applicable items must be completed in full in order to avoid delay in processing this application. Where attached sheets or other technical documentations are utilized in lieu of the space provided, indicate appropriate cross references.

2. Please type or print in ink.

3. Four (4) copies of this application and any supplemental information, and a check for the application fee in accordance with Florida Administrative Code Rule 17-4.05, made payable to the State of Florida Department of Environmental Regulation, must be submitted to the appropriate District office or approved local program.

4. Projects involving construction shall be accompanied by two (2) sets of engineering drawings, specifications and design data as prepared by a Professional Engineer registered in the State of Florida, where required by Chapter 471, Florida Statutes.

5. A map showing site location, property boundaries, layout of installation and other buildings, discharge point(s), etc., shall accompany the application. It shall also include any surface water bodies or potable water supply wells beyond the property boundaries that may be affected by a discharge plume, if any effluent is to be discharged to groundwater.

6. If effluent or sludges generated as wastes in the treatment process qualify as hazardous wastes as defined by Florida Administrative Code Rule 17-30, additional hazardous waste permits may be required.

PART I - STATEMENTS BY APPLICANT AND ENGINEER

A. Applicant

The undersigned owner or authorized representative* of Boston Printing Co.

is fully aware that the statements made in this application for a Industrial Waste Disposal permit are true, correct and complete to the best of his knowledge and belief. Further, the undersigned agrees to maintain and operate the pollution source and pollution control facilities in such a manner as to comply with the provisions of Chapter 403, Florida Statutes, and all the rules of the department. He also understands that a permit, if granted by the department, will be non-transferable and he will promptly notify the department upon sale or legal transfer of the permitted establishment.

Signature of the owner or authorized representative

George Stern (President)
Name and Title (Please type)

Date: 4-11-85 Telephone No. 491-2121

Attach letter of authorization

. Professional Engineer Registered in Florida (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles, applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules of the department. It is also agreed that the undersigned, if authorized by the owner, will furnish the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

ignature: Henry Heller

ame (please type) Henry Heller

lorida Registration No. 17502

Company Name: Heller-Weaver and Cato, Inc.

Address: 5667 Coral Gate Blvd.
Margate, FL 33063

Telephone No. 979-0550

(Affix Seal)

Date: 4-11-85

PART II - DETAILED DESCRIPTION OF SOURCE

A. Describe the nature and extent of the project. Refer to existing pollution control facilities, expected improvements in performance of the facilities and state whether the project will result in full compliance. Attach additonal sheet if necessary.

Discharging of treated liquid industrial waste water by the drainfield method.

B. Construction schedule, if applicable. N/A

Start of Construction (Date):

Completion of Construction (Date):

C. Cost of Construction (Show a breakdown of costs for individual components/units of the project serving pollution control purposes only). Information on actual costs shall be furnished with the application for operation permit.

Cost Breakdown

Silver Recovery Unit	1700.00
1000 Square Ft. Drainfield	3600.00
Total	5300.00

D. For this source indicate any previous DER permits; issuance dates, and expiration dates; and orders and notices. N/A

E. Indicate the relationship between this project and area regional planning for wastewater treatment. List steps to be taken for this industrial waste facility to become part of an area wide wastewater treatment system.

There is no area planning for wastewater treatment.

F. Indicate EPA-NPDES permit, effective date and expiration date.

Permit No. FL:_____ _____ _____

Issue Date Expiration Date

PART III - INDUSTRIAL WASTEWATER TREATMENT PROCESS

General

1. Type of Industry Printing Co.

2. SIC Code _____

3. Raw Materials and Chemicals Used See Attached Sheet on Raw Material

4. Production Rate N/A
tons/day, lbs/day, etc.

5. Normal Operation 12 Hrs./Day
hrs./day, days/week

6. If operation is seasonal, explain N/A

Describe wastewater treatment process and identify treatment units.

2-Polychrome silver recovery unit.
SM-75 SM-1000

. List sludge or slurry treatment units.

Sludge dispose by Waste Management of Florida.

. Describe volume, composition and disposal method of sludge. Identify location(s) of ultimate disposal.

Sludge to be collected in a 55 500 gallon drum and stored in a fenced in area for Chem. Waste, Division of Waste Management of Florida. They will take it to an approved disposal site.

. Method(s) and Location(s) of Flow Measurement.

Flow by gravity.

. Describe practices to be followed to ensure adequate waste treatment during emergencies such as power loss and equipment failures causing shut down of pollution abatement equipment of the proposed/permitted facilities.

No waste discharge when power breakdown.

3. Laboratory: List tests for which equipment/chemicals are provided, or contract laboratory to perform analysis.

Broward Testing.

PART IV - INDUSTRIAL WASTEWATER CHARACTERISTICS

Information furnished in this section for construction permit shall be based on reasonable prediction and good professional judgment. However, actual data shall be submitted when applying for an operation permit. Note: If there is more than one discharge point, submit the following data for each point.

A. Flow (MGD):

.0015 MGD	.0015 MGD	.0015
Average	Maximum	Design

B. Water Quality Characteristics of Effluent

See Broward Testing Laboratory, Inc. report on Volatile Organic Contaminants.

PARAMETER	CONCENTRATION (note units)		
	Minimum	Maximum	30-day Average
Organic:			
volatile or purgeable			
base/neutral extractable			
acid extractables			
total organic carbon (TOC)			
biological oxygen demand (BOD)			
Inorganic			
heavy metals			
major ions			
Physical			
pH			
specific conductivity			
temperature			
suspended solids			

PART V - EFFLUENT DISPOSAL

A. If effluent is discharged to surface waters, complete the following for each discharge point. N/A

1. Immediate receiving body of water (RBW):

a. Name _____

b. Type of receiving water: [ ] Fresh [ ] Salt or brackish

[ ] Drainage Ditch
[ ] Canal
[ ] Creek
[ ] River
[ ] Other (Specify) _____
[ ] Landlocked Lake
[ ] Lake with Outfall
[ ] Tidal Estuary
[ ] Ocean or Gulf

c. Classification of receiving water (in accordance with Rule 17-3): _____

d. Minimum 7-day 10 year low flow of the RBW at the discharge point (if appropriate):

_____ cfs

e. Identify and describe the flow of effluent from the point of discharge to a major body of water. A suitably marked map or aerial photograph may be used.

2. Outfall Information:

a. Discharge location: _____

Latitude ____°____'____"N Longitude ____°____'____"W

b. Design configuration and construction materials:

c. Distance from shore: _____

d. Diameter: _____

e. Elevation of discharge invert: _____ MSL

f. Receiving water bottom depth at point of discharge: _____ MSL

3. Do you request a mixing zone (refer to Fla. Admin. Code Rule 17-4.244)? If yes, for what parameters or pollutants?

B. If effluent is discharged to groundwater, complete the following:

1. Disposal method:

[ ] Slow Rate
[ ] Rapid Rate
[ ] Overland Flow
[ ] Absorption Field
[ ] Percolation/Evaporation Pond
[ ] Combination (specify) _____
[X] Other (specify) Drainfield

2. Location(s) of application area(s):

741 N.W. 57 Place, Ft. Lauderdale, FL 33309

3. Ownership of land (if different from applicant): Marie LeLash
Attach approval from owner for use of land for effluent disposal.
5100 N. Ocean Blvd. Apt. 709H, Ft. Lauderdale, FL 33308

4. Describe the hydrology and geologic structures of the affected area, using site specific information, including the general vertical and lateral limits of each classification of groundwater. (Maps and cross sections are suggested.)
See Florida Testing report on Percolation test/soil classification report.

5. What is the direction of groundwater flow? Westerly

6. Water table levels generally range from a high of 3 feet to a low of 3.5 feet below average land surface elevation.

7. Surface or sub-surface irrigation:

a. Description of disposal structure(s).
Drainfield 1000 sq. ft.

b. Area under irrigation; total N/A per rotation.

Latitude 26 ° 12 ' 0 "N Longitude 80 ° 9 ' 0 "W

c. Irrigation rate: N/A

d. Percolation rate: 57 seconds per inch

e. Ultimate disposal of surface/sub-surface runoff: Groundwater

f. Type of cover crop and general routine operation of the system: 1
Bermuda grass.

8. Surface Impoundments: N/A

a. Number of cells and latitude and longitude of each. _____

b. Bottom area of cells: _____ ft^2 _____ acres

c. Design depth of water in cells: _____ ft

d. Cell configuration (if rectangular): Length _____ ft; Width _____ ft

e. Average hydraulic loading rate: _____ inches/day _____ GPD/ft^2

f. Hydraulic loading period: _____ days; resting period _____ days

g. Percolation rate: _____ gpd/ft^2

9. Number and location of monitoring wells: Proposed 2 wells see plan for location.

N/A

ADDITIONAL DATA FOR TEMPORARY OPERATION PERMIT
(For Existing Sources Not Meeting Department Standards)

Justification for Temporary Operation Permit Request

Attach additional sheets responding to the following items:

1. The facts and reasons which support that:

   a. the applicant has a waste for which no feasible and acceptable method of treatment or disposal is known and the applicant is making a bona fide effort through research and other means to discover and implement such a method;

   b. the applicant needs permission to pollute the waters within the state for a period of time necessary to complete research, planning, construction, installation or operation of an approved abatement facility or alternate waste disposal system;

   c. there is no present reasonable, alternative means of disposing of applicant's waste other than by discharging into waters of the state;

   d. the denial of a temporary operation permit would work an extreme hardship upon the applicant;

   e. granting of a temporary operation permit will be in the public interest;

   f. the schedule for meeting compliance in C. is reasonable;

   g. the discharge will not be unreasonably destructive to the quality of the receiving waters.

Technical Data:

1. Condition of receiving body of water:

2. Proposed Time Discharge is Required: _____

3. Reasons for Time Required:

4. Reasons why conditions of Chapter 403, F.S., and Florida Administrative Code Rules 17-3, 17-4 and 17-6 have not been met:

N/A

C. Plans for meeting full compliance with Chapter 403, F.S., and Rules 17-3, 17-4 and 17-6.

Schedule of Increments of Progress to meet compliance:

1. Date when planning is expected to be complete _____

2. Date when engineering will be complete _____

3. Date construction application will be submitted to upgrade or replace the existing plant or build lift station and force main to phase out the present facility _____

4. Date contract will be let _____

5. Date construction will commence _____

6. Date construction is to be complete and so certified _____

7. Date that wastewater collection/transmission/treatment/effluent disposal systems will be certified "in compliance" with your permit _____

(cross out inappropriate components)

D. Who will be responsible for overseeing that the above time schedule will be met?

NAME _____
(Print or type)

TITLE _____

ADDRESS _____

_____

TELEPHONE NUMBER _____

Signature _____

Date _____

MEMORANDUM

Reference 18

DATE: 2/12/85

TO: G. Riley

FROM: B. Kester BK

SUBJECT: Boston Printing Co.

We are in the process of licensing the subject hazardous material facility located at 741 NW 57th Pl., Ft. Lauderdale. Our records show no testing of their effluent has ever been done by EQCB. Broward Testing Lab results show trace amounts of most VOC's (aggregate total 7.7 ug/l) and -0.01 mg/l of silver.

Silver and chloroform are the two most likely pollutants.

Would appreciate it if you could sample their effluent and test for VOC's and metals.

They discharge 1500 GPD to a new 1000 SF drainfield.

BK/lr

EXCEPT: COLIF/100ml - TEMP. (F&C) - TURB. (JTU) - ODOR

PC 427

Grab Sample.

Very Clear.

pH meter standard 7.0 @ 1030

pH 8.9

BOTTLE NUMBER	34051A	34051B
SAMPLE VOLUME	500ml	3 x 40 mls.
LAB TESTS	Ag.	(Meth 601 & 624) Purg Org.
PRESERVATIVE	HNO_3 Ice	Ice.

M.2 - SITE MAINTENANCE FORM

* ACTION: _ *

EPA ID : FLD073869414

SITE NAME: BOSTON PRINTING CO., INC. SOURCE: R

STREET : 741 N. W. 57TH PLACE CONG DIST: 17

CITY : FT. LAUDERDALE ZIP: 33309

CNTY NAME: BROWARD CNTY CODE : 011

LATITUDE : 26/12/00.0 LONGITUDE : 080/09/00.0

LL-SOURCE: R LL-ACCURACY:

SMSA : 2680 HYDRO UNIT: 03090202

INVENTORY IND: Y REMEDIAL IND: Y REMOVAL IND: N FED FAC IND: N

NPL IND: N NPL LISTING DATE: NPL DELISTING DATE:

SITE/SPILL IDS:

RPM NAME: DENISE BLAND RPM PHONE: 404-881-2234

SITE CLASSIFICATION: SITE APPROACH:

DIOXIN TIER: REG FLD1: REG FLD2:

RESP TERM: PENDING ( ) NO FURTHER ACTION ( )

* PENDING (_) NO FURTHER ACTION (_) *

ENF DISP: NO VIABLE RESP PARTY ( ) VOLUNTARY RESPONSE ( )
ENFORCED RESPONSE ( ) COST RECOVERY ( )

SITE DESCRIPTION:

THE FACILITY IS USED TO PRODUCE PHOTOGRAPHIC PRINTS USING POLYCHROME FILM, SILVER NITRATE, AND OTHER DEVELOPING CHEMICALS. PRIOR TO JULY 1982, IT WAS A STORAGE FACILITY FOR HOLLINGSWORTH SOLDERLESS TERMINAL CO. (HSTC).

M.2 - PROGRAM MAINTENANCE FORM

ACTION: _

SITE: BOSTON PRINTING CO., INC.

EPA ID: FLD073869414 PROGRAM CODE: H01 PROGRAM TYPE: _

PROGRAM QUALIFIER: ALIAS LINK :

PROGRAM NAME: SITE EVALUATION

DESCRIPTION:

M.2 - EVENT MAINTENANCE FORM

* ACTION: _ *

SITE: BOSTON PRINTING CO., INC.
PROGRAM: SITE EVALUATION

EPA ID: FLD073869414 PROGRAM CODE: H01 EVENT TYPE: DS1

FMS CODE: EVENT QUALIFIER : EVENT LEAD: S * _ ___ _ *

EVENT NAME: DISCOVERY STATUS: * _____ _ *

DESCRIPTION:

* _____ *
* _____ *
* _____ *
* _____ *

ORIGINAL	CURRENT	ACTUAL			
START:	START:	START:	* __/__/__	__/__/__	__/__/__ *
COMP :	COMP :	COMP : 09/30/85	* __/__/__	__/__/__	__/__/__ *

HQ COMMENT:

* _____ *

RG COMMENT:

* _____ *

COOP AGR #	AMENDMENT #	STATUS	STATE %				
			0	* _____	_____	__	___ *

M.2 - EVENT MAINTENANCE FORM

* ACTION: _ *

SITE: BOSTON PRINTING CO., INC.
PROGRAM: SITE EVALUATION

EPA ID: FLD073869414 PROGRAM CODE: H01 EVENT TYPE: PA1

FMS CODE: EVENT QUALIFIER : EVENT LEAD: S * _ ___ _ *

EVENT NAME: PRELIMINARY ASSESSMENT STATUS: * _____ _ *

DESCRIPTION:

* _____ *
* _____ *
* _____ *
* _____ *

ORIGINAL	CURRENT	ACTUAL			
START:	START:	START: 09/30/85	* __/__/__	__/__/__	__/__/__ *
COMP :	COMP :	COMP : 09/30/85	* __/__/__	__/__/__	__/__/__ *

HQ COMMENT:

* _____ *

RG COMMENT:

* _____ *

COOP AGR #	AMENDMENT #	STATUS	STATE %				
			0	* _____	_____	__	___ *

M.2 - EVENT MAINTENANCE FORM

* ACTION: _ *

SITE: BOSTON PRINTING CO., INC.
PROGRAM: SITE EVALUATION

EPA ID: FLD073869414 PROGRAM CODE: H01 EVENT TYPE: SI1

FMS CODE: EVENT QUALIFIER : EVENT LEAD: S * _ ___ _ *

EVENT NAME: SITE INSPECTION STATUS: * _____ _ *

DESCRIPTION:

* _____ *
* _____ *
* _____ *
* _____ *

	ORIGINAL	CURRENT	ACTUAL			
START:		START:	START: 06/16/86	* __/__/__	__/__/__	__/__/__ *
COMP :		COMP :	COMP : 06/16/86	* __/__/__	__/__/__	__/__/__ *

HQ COMMENT:

* _____ *

RG COMMENT:

* _____ *

COOP AGR #	AMENDMENT #	STATUS	STATE %				
			0	* _____	_____	__	___ *

BOSTON PRINTING CO., INC.
FLD073869414
PRELIMINARY ASSESSMENT

A. SITE DESCRIPTION. Boston Printing Co. is located in a commercial/ industrial area at 741 N.W. 57th Place, Fort Lauderdale, Broward County, Florida. The facility has produced photographic prints using polychrome film, silver nitrate and other developing chemicals at the site from July 1982 to the present. Prior to July 1982, the building was a storage facility for Hollingsworth Solderless Terminal Co. (HSTC). An adjacent HSTC building is a Superfund site under cleanup by the USEPA.

B. DESCRIPTION OF HAZARDOUS CONDITIONS, INCIDENTS AND PERMIT VIOLATIONS. There are a variety of chemicals used in the photographic developing process. Material Safety Data Sheets from the manufacturer indicate that a number of these chemicals may be disposed of down the drain with plenty of water. Some of these chemicals contain irritating compounds in small percentages.

During 1984, there were repeated warnings and a Notice of Violation to Boston Printing by BCEQCB(Broward County Environmental Quality Control Board) because of a failed drainfield. Wastes from the developing process are piped to this drainfield. The actual hazard which this posed is uncertain because no samples were collected of the ponded water on the drainfield. 1985 sampling of the effluent to the drainfield did detect chloroform, methylene chloride and bromodichloromethane in significant concentrations.

Presently, Boston Printing is in the process of applying for a license to build a new treatment system. This will include a silver recovery unit, a sludge holding tank and a 1,000 square foot drainfield.

C. NATURE OF HAZARDOUS MATERIALS. Most of the materials at the site pose minor hazards. Many can be disposed of down the drain, if sufficient dilution occurs. However, chloroform found in the effluent stream is toxic, as is methylene chloride. In addition, the developer is flammable, and one of the replenisher liquids used in the developing process is a strong irritant to eyes.

D. ROUTES OF CONTAMINATION. Possibles routes of contamination include drinking water, groundwater used for irrigation purposes and surface water. Direct contact with the hazardous wastes is likely for workers only, since access to the site is restricted.

E. POSSIBLE AFFECTED POPULATIONS AND RESOURCES. Residents are provided with drinking water from the city of Ft. Lauderdale Executive/ Prospect wellfield which is a shallow, unconfined, sole-source aquifer. The site is 2,500 feet east of the eastern edge of this wellfield. Potential contamination of the groundwater, as a result of drainfield failure, could reach the drinking water wells.

Run-off of standing water as a result of drainfield failure may have contaminated storm sewers, or even a nearby (1,000 feet) lake. Lake contamination would effect aquatic flora and fauna as well as recreational users.

Workers may be exposed to irritating chemicals during manufacturing and there is a small potential for fire.

F. RECOMMENDATIONS AND JUSTIFICATIONS. The chemicals discharged to the drainfield at this site are hazardous. There has been discharge of this poorly characterized waste to the ground for at least 3 years. In addition, the site was owned by Hollingsworth Solderless Terminal Company prior to 1982, and it is not known if they contaminated this site. It appears from a recent wastewater treatment and disposal permit application that the company is anxious to correct past problems. A medium priority for inspection is recommended.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION
01 STATE: FL | 02 SITE NUMBER: D073869414

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Boston Printing Co., Inc.	741 N.W. 57th Place				
03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Ft. Lauderdale	FL	33309	Broward	011	17
09 COORDINATES LATITUDE: 26 12 00.0	LONGITUDE: 080 09 00.0				

10 DIRECTIONS TO SITE (Starting from nearest public road): Proceed north through Ft. Lauderdale on I-95. Exit off I-95 at Cypress Creek Road and head west to the intersection of Cypress Creek Road and Powerline Road. Proceed south 1/4 mile to NW 57th Pl. and turn left. Boston Printing is on the north side of the road 500 feet from the intersection of NW 57th Pl. with Powerline Road.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)			
Boston Printing Co., Inc.	741 N.W. 57th Place			
03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER	
Ft. Lauderdale	FL	33309	(305) 491-2121	
07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)			
George Stern (Pres.)	741 N.W. 57th Place			
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER	
Ft. Lauderdale	FL	33309	(305) 491-2121	

13 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☒ A. RCRA 3001 DATE RECEIVED: 03/05/85 (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☒ YES DATE 8/27/85 (MONTH DAY YEAR)
☐ NO
See Attachment A

BY (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☒ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☒ F. OTHER: BCEQCB (Broward County Environmental Quality Control Board) (Specify)
CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)
☒ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION
July 1982 (BEGINNING YEAR) | Present (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
The developing chemicals include flammable, volatile chemicals, some of which are eye and skin irritants. Discharge to the on-site drainfield contains chloroform and some methylene chloride. These chemicals are toxic and potentially carcinogenic.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
Discharge of effluent containing toxic organic compounds to a drainfield poses a threat to groundwater quality, and to the quality of water drawn from the nearby Executive/Prospect wellfield. In addition, ponding of the effluent on the drainfield during 1984 may have contaminated nearby surface waters.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)
☐ A. HIGH (Inspection required promptly) ☒ B. MEDIUM (Inspection required) ☐ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER		
Eric Nuzie	FDER	(904) 488-0190		
04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Willard Murray	N/A	E.C. Jordan Co.	(207) 775-5401	09/09/85 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

MDR

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION
01 STATE | 02 SITE NUMBER
FL | D073869414

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)
- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☒ C. SLUDGE
- ☐ D. OTHER (Specify)
- ☐ E. SLURRY
- ☒ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)
- TONS: Unknown
- CUBIC YARDS: Unknown
- NO. OF DRUMS: 8

03 WASTE CHARACTERISTICS (Check all that apply)
- ☒ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☒ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☒ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☒ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	Unknown		
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES	Unknown		
MES	HEAVY METALS	Unknown		

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
MES	Silver	7440-22-4	LM-septic		
OCC	N-propanol	71-23-8	LM-septic[1]		
OCC	Benzyl Alcohol	100-51-6	LM-septic[1]		
OCC	Hydroquinone	123-31-9	LM-septic[1]		
BAS	Potassium Hydroxide	1310-58-3	LM-septic[1]		

V. FEEDSTOCKS (See Appendix for CAS Numbers) NA

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Material Safety Data Sheets. 3/21/83

EPA FORM 2070-12 (7-81)

1) These chemicals are contained in the Replenishing and Fixing Solutions used in the manufacturing process.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FL	D073869414

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,000+
04 NARRATIVE DESCRIPTION The effluent from the photographic printing process, containing up to 47 mg/l chloroform and 9.6 mg/l methylene chloride, are discharges to a drainfield on-site. The ultimate destination for this effluent is the groundwater. During 1984, this drainfield was found to be saturated. Drainfield disposal of the effluent poses a threat to groundwater quality. No groundwater samples have been collected.

01 [X] B. SURFACE WATER CONTAMINATION — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,000+
04 NARRATIVE DESCRIPTION
Potential leaks in the effluent piping system could lead to surface spills which in turn could impact a pond 1,000 feet from the site. Past malfunctioning of the drainfield system has also caused standing water on-site. No surface water samples have been collected.

01 [ ] C. CONTAMINATION OF AIR — 02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0
04 NARRATIVE DESCRIPTION
Remote Potential - only small volumes of volatile compounds are used in processing at the site.

01 [X] D. FIRE/EXPLOSIVE CONDITIONS — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 1-100
04 NARRATIVE DESCRIPTION
There are some flammable chemicals used in the developing process but the overall fire hazard is small, and only workers would be endangered.

01 [X] E. DIRECT CONTACT — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 1-100
04 NARRATIVE DESCRIPTION
Workers come in contact with irritating, flammable processing chemicals during film developing. The general public may contact potentially contaminated groundwater for irrigation, surface waters and drinking water.

01 [X] F. CONTAMINATION OF SOIL — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 AREA POTENTIALLY AFFECTED: <0.5 (Acres)
04 NARRATIVE DESCRIPTION
Overflows of the on-site drainfield in the summer of 1984 saturated soils with wastewater containing up to 47 mg/l chloroform and 9.6 mg/l methylene chloride (BCEQCB 2/12/85). No soil samples have been taken.

01 [X] G. DRINKING WATER CONTAMINATION — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,000+
04 NARRATIVE DESCRIPTION
Ft. Lauderdale residents are provided with drinking water from the Ft. Lauderdale Executive/Prospect municipal wellfield, which produces from the shallow, permeable Biscayne Aquifer. The site is located 2,500 feet from the eastern edge of the wellfield and potential contamination of groundwater may impact the wells.

01 [X] H. WORKER EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 WORKERS POTENTIALLY AFFECTED: 1-100
04 NARRATIVE DESCRIPTION
At least some of the 30 workers at the company may be exposed to hazardous chemicals via inhalation of volatile replenisher chemicals and may come in direct contact with other irritants.

01 [X] I. POPULATION EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10,000+
04 NARRATIVE DESCRIPTION
Access to the area where drums of photograph processing chemicals are stored is restricted by a fence. The general public may be exposed if groundwater or surface water is contaminated.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
FL	D073869414

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

Remote Potential - chemicals on-site pose only minor hazards to plant life. No damage has been reported.

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION (Include name(s) of species)

Remote Potential - chemicals on-site pose minor hazards to wildlife. No wildlife was reported on-site.

01 ☒ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

Chemicals at the site in general do not bioaccumulate. There is a potential for silver to accumulate in the food chain, but the paucity of area wildlife means that exposure to silver is unlikely.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/leaking containers) — 02 ☒ OBSERVED (DATE: 6/8/84) ☐ POTENTIAL ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 1-100 — 04 NARRATIVE DESCRIPTION

The industrial drainfield on-site failed, and standing water collected on-site (6/8/84). No tests were made on the standing water or soil. BCEQCB issued an NOV on 7/12/84. An application has been filed to install an updated treatment/drainfield system on-site. (4/12/85).

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

None reported

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

None reported. However ponding due to the drainfield failure may run off to the storm sewers.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

None reported

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None known

III. TOTAL POPULATION POTENTIALLY AFFECTED: 10,000+

IV. COMMENTS

Samples of the effluent have been taken by BCEQCB (2/12/85). Results included methylene chloride (9.6 mg/l) chloroform (47 mg/l) and bromodichloromethane (11.4 mg/l). Other sampling found no problems. No samples contained silver. A 4/1/85 BCEQCB memo directs that effluent to the drainfield be sampled every month.

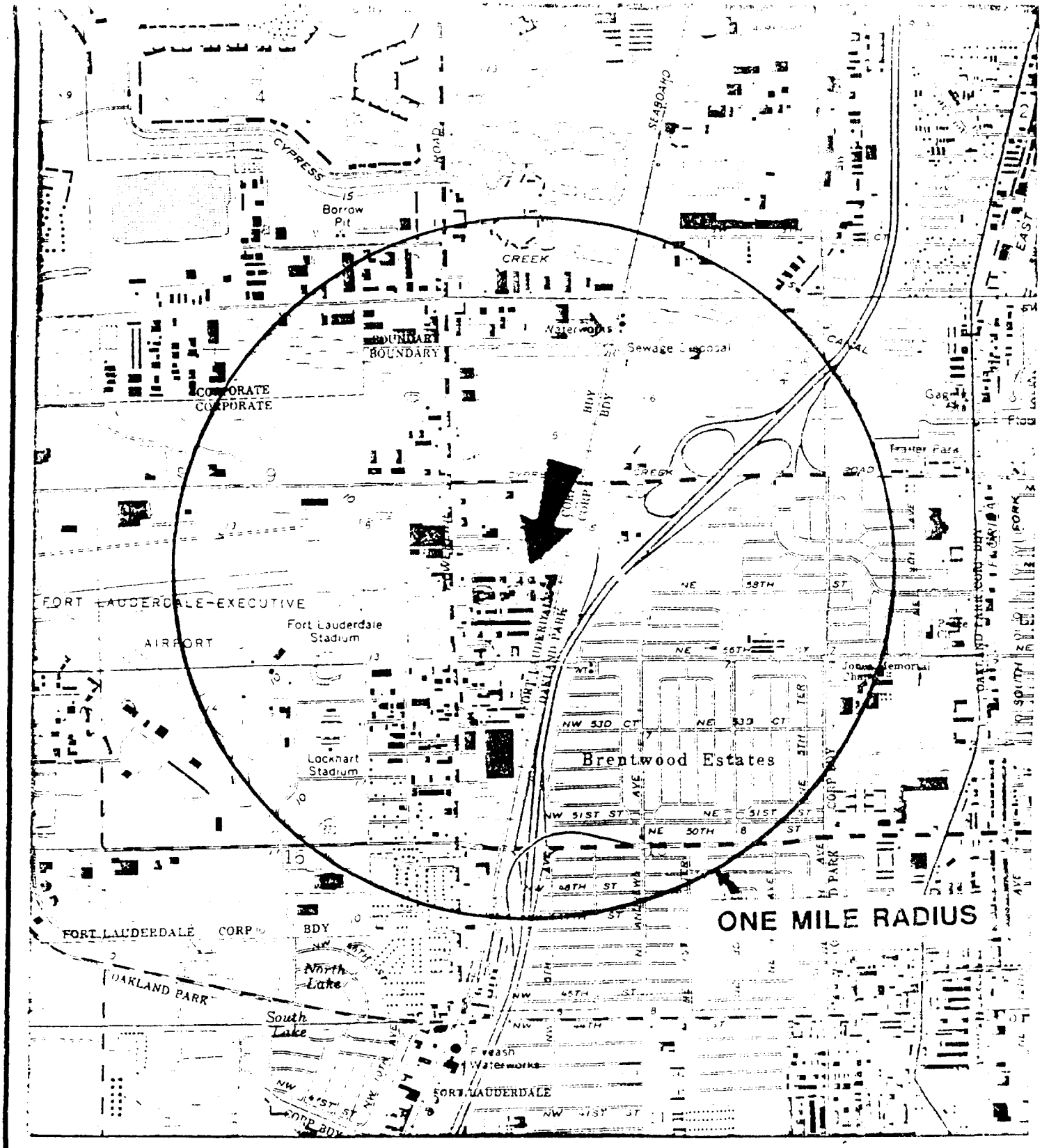
V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

See attached reference list.

ATTACHMENT A
BOSTON PRINTING CO., INC.
FLD073869414

ON-SITE INSPECTIONS

Date	Agency	Samples	Comments
8/27/85	E.C. Jordan Co. (for FDER)	No	A windshield survey (off-site inspection) found no problems.
6/12/85	BCEQCB	Yes-effluent	No violations detected.
4/18/85	BCEQCB	No	No violations detected.
3/14/85	BCEQCB	Yes	The effluent contained Chloroform = 30 mg/l.
2/12/85	BCEQCB	Yes	The effluent contained Chloroform = 47.0 mg/l, Methylene chloride = 9.6 mg/l, Bromodichlorometha = 11.4 mg/l.
8/14/84	Broward Testing Laboratory	Yes	No violations detected.
7/23/84	Broward Testing Laboratory	Yes	No violations detected.



SCALE 1 : 24000

0 1/2 1 MILE

N

000 0 1000 2000 FEET

SITE LOCATION MAP

Boston Printing Co., Inc.

741 NW 57th Place

USGS QUAD Ft. Lauderdale South

DATE 1983

ECOLOGY

REFERENCES

1. Environmental Protection Agency, Federal Register, National Oil and Hazardous Substances Contingency Plan, Part V, July 16, 1982.

2. Farm Chemicals Handbook, Willoughby, OH: Meister Publishing Company, 1982.

3. Florida Department of Environmental Regulation, The Sites List, Summary Status Report, July 1, 1983 - June 30, 1984.

4. Florida Department of Environmental Regulation, 3012 Folder, 2600 Blairstone Road, Tallahassee, Florida. To be used for completion of Preliminary Assessment, Form 2070-12.

5. Health and Safety Plan, Florida 3012 Program, E.C. Jordan Co., June 1984.

6. Healy, Henry G., 1977, Public Water Supplies of Selected Municipalities in Florida, 1975: U.S. Geological Survey, Water-Resources Investigations 77-53, p. 309.

7. NUS Project for Performance of Remedial Response Activities at Uncontrolled Hazardous Substance Facilities--Zone 1, NUS Corporation, Superfund Division.

8. NUS Training Manual, Project for Performance of Remedial Response Activities at Uncontrolled Hazardous Substance Facilities--Zone 1, NUS Corporation, Superfund Division.

9. Sax, N. Irving, Dangerous Properties of Industrial Materials, Sixth Edition, Van Nostrand Reinhold Co., 1984.

10. TLVs Threshold Limit Values for Chemical Substances in the Work Environment Adopted by ACGIH for 1983-84, American Conference of Governmental Industrial Hygienists, ISBN: 0-936712-45-7, 1983.

11. U.S. Geological Survey, Topographic Map, 1:24,000 Series.

12. Windholz, M., ed. The Merck Index, an Encyclopedia of Chemicals and Drugs, Rahway, NJ: Merck and Company, Inc., 1976.